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Relation of Economic Status to Tuberculosis Mortality by Age and Sex

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THE close relationship of economic status and tuberculosis mortality has been documented by numerous studies. In most of these, economic status has been defined in terms of broad occupational classes. For example, the tuberculosis mortality rates of adult males in England and Wales in 1921–1923 were found to be as shown in Table 1.[1]

TABLE 1

Adjusted Mortality Rates, Respiratory Tuberculosis, Male Adults in Five Social Classes, England and Wales, 1921–1923

Occupational Class	*Mortality Rate per 100,000*
I —Upper and middle	73.2
II —Intermediate	126.3
III—Skilled Labor	146.2
IV—Intermediate	150.2
V —Unskilled labor	209.5

In the United States, Britten[2] analyzed tuberculosis mortality rates by occupational class in 10 states in 1930 as shown in Table 2.

Other studies defined economic status in terms of family income. For example, in Hamburg, Germany, in 1896–1900, the following data (Table 3) were obtained.[3]

TABLE 2

Adjusted Mortality Rates, Respiratory Tuberculosis, Males, 15–64 Years of Age, in 10 States, 1930, by Occupational Class

Occupational Class	*Mortality Rate per 100,000, Respiratory Tuberculosis*
Professional men	26.2
Proprietors, managers and officials	43.2
Clerks and kindred workers	65.8
Skilled workers and foremen	72.1
Semiskilled workers	102.1
Unskilled workers	184.9
All gainfully occupied	87.5
Agricultural workers	46.5

TABLE 3

Mean Annual Mortality Rates from Tuberculosis per 100,000 Persons Classified Accordinig to Family Income, Hamburg, Germany, 1896–1900

Family Income in Marks	*Tuberculosis Mortality Rate per 100,000*
900– 1,200	657
1,200– 2,000	559
2,000– 3,500	363
3,500– 5,000	228
5,000–10,000	183
10,000–25,000	172
25,000–50,000	221

In the United States, Chapin found that in Providence, R. I., in 1865, the adjusted mortality rate from pulmonary tuberculosis among the 10,515 income

taxpayers was 139.7, as compared with a rate of 431.0 among the 44,080 non-taxpayers.[4]

Green determined tuberculosis mortality rates in the census tracts of the Cleveland Five-City Area in 1928–1931, using equivalent monthly rentals as the measure of economic status, with results shown in Table 4.[5]

TABLE 4

Adjusted Tuberculosis Mortality Rates, White Population, Cleveland Five-City Area, 1928–1931, by Economic Area

Economic Area		Tuberculosis Mortality Rate per 100,000 (White)
1, 2	Lowest	127
3		78
4		74
5		55
6		48
7		45
8		34
9		29
10		26
11		27
12		22
13, 14	Highest	19

One of the findings of the National Health Survey made in 1935–1936 was a well defined relationship between economic status and disability from tuberculosis (Table 5).[6]

As a result of these and similar studies it has become an accepted fact that occupational class and economic status bear a definite relationship to tuberculosis mortality as well as disability. Unfortunately there has been little disposition to probe further to determine which factor or factors in economic status or occupational class are responsible for the relationship.

TABLE 5

Days of Disability per Person per Year from Tuberculosis, for Persons of All Ages, According to Economic Status

Annual Family Income or Relief Status	Days of Disability from Tuberculosis per Person per Year
Relief	0.70
Non-relief	
Under $1,000	0.31
$1,000–$1,500	0.20
$1,500–$2,000	0.14
$2,000–$3,000	0.11
$3,000 and over	0.08

It is clear that several causes may be involved — overcrowding, bad housing, poor nutrition, overwork, increased exposure to infection, etc. It is extremely difficult to separate these factors, since the groups which have a low economic status generally tend to be unskilled laborers who have strenuous jobs and suffer from overcrowding, poor housing, and malnutrition. How then can a more refined analysis be obtained?

One method is to compare urban and rural populations which have a similar status in terms of family income. The author is not familiar with any such study. However, the fact that Britten found the tuberculosis mortality rate to be only 46.5 among agricultural workers as compared with 87.5 among all gainfully occupied persons (Table 2) would tend to indicate that economic status *per se* is not the only determinant and that other factors related to urban living probably play a significant role.

Another method which may be used

TABLE 6

Tuberculosis Mortality Rates by Age and Sex per 1,000 Persons in Copenhagen, Denmark, According to Broad Occupational Classes, 1865–1874

Occupational Class	All Ages 20 & over Adjusted	20–24	25–34	35–44	45–54	55–64	65 and over
Males							
Professional, Salaried and Merchant Class	3.4	3.4	3.3	3.1	3.4	4.4	2.9
Working Class	6.9	*4.3	4.5	6.0	8.8	13.3	10.6
Females							
Professional, Salaried and Merchant Class	2.4	2.6	2.7	2.4	2.2	2.2	1.3
Working Class	3.4	1.9	2.6	4.0	4.4	4.5	4.5

is to compare the tuberculosis mortality of males and females in various economic classes. Data in Table 6 were obtained for Copenhagen, Denmark, for the years 1865–1874.[7]

It will be noted that among adult males, the tuberculosis mortality rate is twice as high in the working class as in the professional, salaried, and merchant class. Among adult females, however, the difference is not as marked; the rate in the working class is only 1½ times as high as in the other classes.

Green [8] studied the age- and sex-specific tuberculosis mortality rates in Cleveland in 1928–1931 for two contrasting economic areas—the Low Area, which consisted of a population of approximately 100,000 living in census tracts having the lowest equivalent monthly rentals, and the High Area, consisting of a population of about 100,000 living in census tracts having the highest rentals. He found that in the Low Area the male rate was quite similar to the female rate up to age 25, after which the male rate was very markedly greater. In the High Area, on the other hand, the male and female rates were found to be quite similar throughout, both being much lower at all ages than was found to be the case in the Low Area.

Sydenstricker [9] compared age-specific tuberculosis mortality rates among males and females in urban and rural areas in nine states in 1908–1912 and among insured members of wage earners' families in 1911–1916. He found that although there were some differences in the rates for adult females in the rural, urban, and insured wage earners' families (highest in the wage earners' families), these differences were fairly small. Among adult males, however, there were very striking differences, with the rural rates considerably below the urban and these in turn considerably lower than the rates among insured wage earners. He concluded that: "The rate for adult wage earning males, especially in middle age after they have been at work a number of years, is in excess of that for any other group. The possibility that 'race' or, to put it more exactly, country of birth—*per se* was an important factor may be dismissed since females were largely of the same nationality as their husbands at the time covered by the statistics used. Yet wives, living in the same economic, social, and home environment, did not die from the disease to nearly the extent that their wage earning husbands did. . . . It is not 'conditions of life' only, but also the particular conditions constituting occupational environment, which are responsible for the greater mortality rate among male wage earners in the prime of life in cities than among women in general or among men in other pursuits."

The present study of tuberculosis mortality in the city of Buffalo gives striking confirmation of Sydenstricker's findings. Buffalo is an important industrial center, with large steel, auto, railroad, grain, aircraft and electrical industries. Its population in 1940 was 575,901, of which 81 per cent were native white, 16 per cent foreign-born white, and 3 per cent non-white, mainly Negroes.

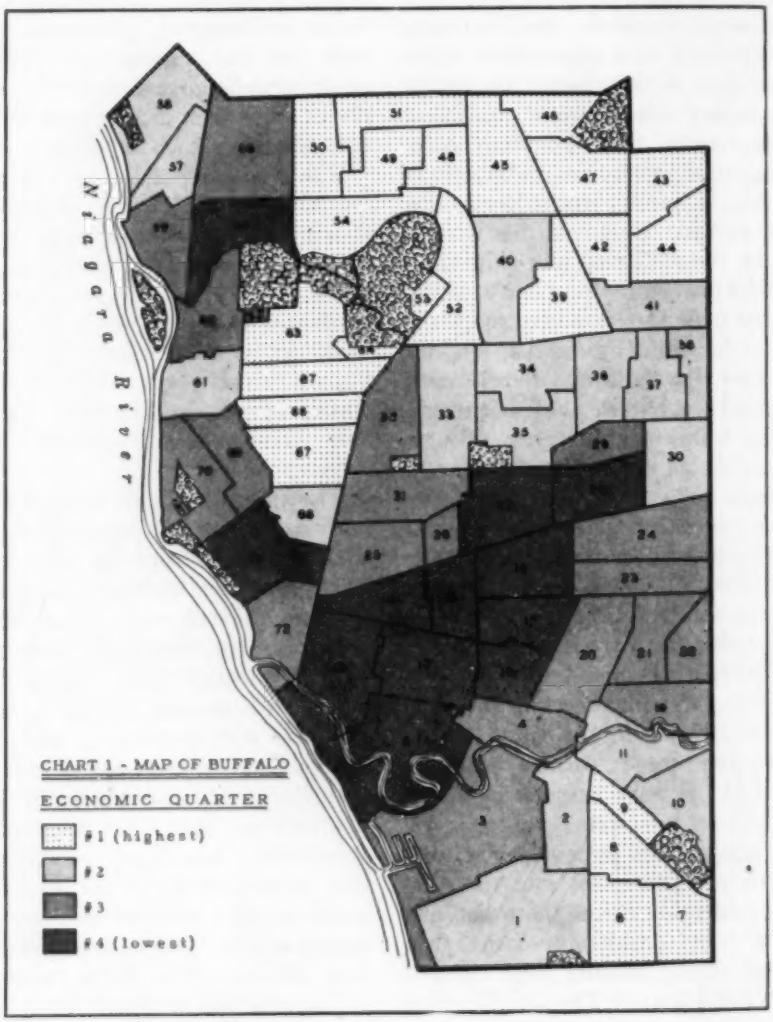
The 1940 Census data on population and socio-economic characteristics of the 72 census tracts in Buffalo were used. The relative economic status of the population in each census tract was determined by combining four indices: median monthly rent, proportion of homes with central heating, proportion of homes with mechanical refrigeration, and median years of school completed. Statistical analyses made by the Buffalo Foundation have demonstrated that these factors are closely correlated, and that consideration of all four factors yields a more reliable measurement of average income and economic conditions than the use of a single factor.

The city was grouped into four quar-

ters of approximately 145,000 population each on the basis of economic status. The classification of census tracts into the four economic quarters is shown on the map, Chart 1. Resident tuberculosis deaths occurring during the three year period 1939–1941 were used to determine annual tuberculosis death rates by age, sex, and color for each of the four quarters as well as the city as a whole.

Tuberculosis mortality by age, sex, and color for the City of Buffalo is shown in Table 7 and Chart 2. It will be noted that there is a significantly higher male death rate after the third decade for both the white and non-white populations (the non-white population in Buffalo is almost entirely Negro). This finding is essentially consistent with the data obtained for all cities of over 100,000 population in the United States.[10]

Tuberculosis mortality rates by age and sex were calculated for the white population in each of the economic quarters. Similar comparisons for the non-white population could not be made



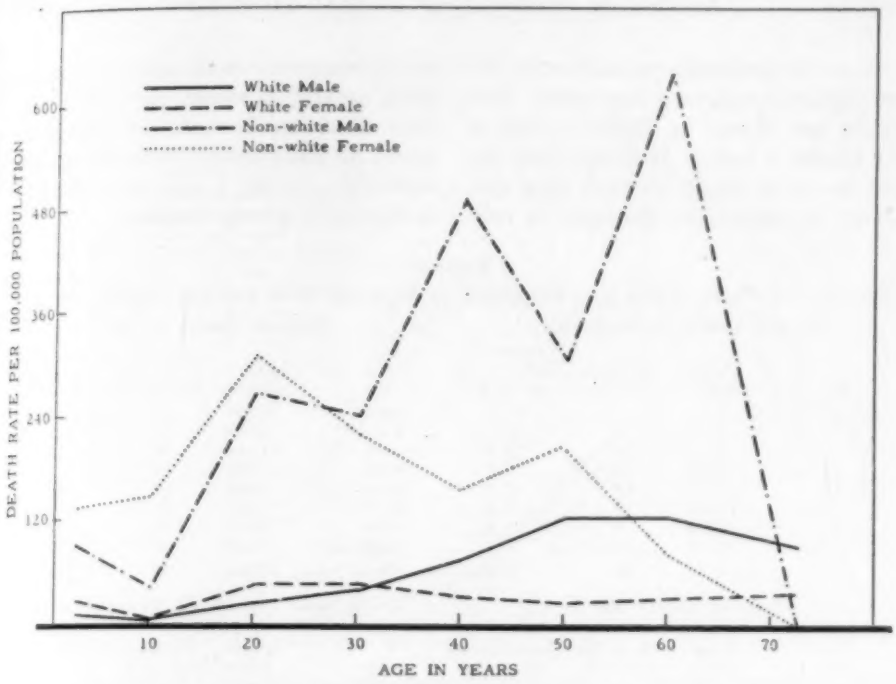


CHART 2 - Tuberculosis Mortality Rates by Age, Sex and Color - Buffalo, 1939-41

TABLE 7

Tuberculosis Mortality by Age, Sex, and Color, Buffalo, 1939–1941

Age	Male			Female		
	Population	*Tbc deaths 1939–1941*	*Annual Tbc mortality rate per 100,000*	*Population*	*Tbc deaths 1939–1941*	*Annual Tbc mortality rate per 100,000*
			White			
Under 5	18,152	5	9.2	17,711	13	24.5
5–14	41,538	4	3.2	41,388	5	4.0
15–24	48,520	35	24.0	51,520	69	44.6
25–34	44,547	51	38.2	47,088	65	46.0
35–44	41,192	94	76.1	42,545	43	33.7
45–54	39,855	150	125.5	37,968	28	24.6
55–64	24,189	92	126.8	24,314	24	32.9
65 and over	16,640	46	92.1	20,451	23	37.5
Total	274,633	477	57.9	282,985	270	31.8
			Non-White			
Under 5	719	2	92.7	754	3	132.4
5–14	1,541	2	43.3	1,590	7	146.8
15–24	1,245	10	267.7	1,501	14	310.9
25–34	1,501	11	244.3	1,803	12	221.9
35–44	2,151	32	495.9	1,907	9	157.3
45–54	1,295	12	308.9	959	6	208.6
55–64	466	9	643.8	385	1	86.6
65 and over	216	0	0	250	0	0
Total	9,134	78	284.6	9,149	52	189.4
			Total			
Under 5	18,871	7	12.4	18,465	16	28.9
5–14	43,079	6	4.6	42,978	12	9.3
15–24	49,765	45	30.1	53,021	83	52.2
25–34	46,048	62	44.9	48,891	77	52.5
35–44	43,343	126	96.9	44,452	52	39.0
45–54	41,150	162	131.2	38,927	34	29.1
55–64	24,655	101	136.6	24,699	25	33.7
65 and over	16,856	46	91.0	20,701	23	37.0
Total	283,767	555	65.2	292,134	322	36.7

because the non-white population in the two highest quarters is negligible. The results are shown in Tables 8 and 9 and Charts 3 and 4. It is seen that before the third decade there is some difference in tuberculosis mortality by economic status for both sexes. After the third decade, however, there is a very large difference in mortality among the males of the various economic groups, while there is only a moderate difference in mortality among females.

TABLE 8

Tuberculosis Mortality, White Male Population, by Economic Status and Age, Buffalo, 1939–1941

Economic Quarter No. 1 (Highest)

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	3,749	2	17.8
5–14	8,879	0	0
15–24	9,643	6	20.7
25–34	10,156	9	29.5
35–44	11,179	14	41.7
45–54	10,305	17	55.0
55–64	6,201	9	48.4
65 and over	4,621	5	36.7
Total	64,733	62	31.9

Economic Quarter No. 2

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	4,334	0	0
5–14	9,949	0	0
15–24	11,166	4	11.9
25–34	11,024	15	45.4
35–44	10,853	14	43.0
45–54	9,762	25	85.4
55–64	5,914	21	118.4
65 and over	4,134	14	112.9
Total	67,136	93	46.2

Economic Quarter No. 3

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	5,176	1	6.4
5–14	11,761	0	0
15–24	13,791	9	21.8
25–34	12,310	11	29.8
35–44	10,526	31	98.2
45–54	10,184	45	147.3
55–64	6,443	29	150.0
65 and over	4,583	15	109.1
Total	74,774	141	62.8

Economic Quarter No. 4 (Lowest)

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	4,893	2	13.6
5–14	10,949	4	12.2
15–24	13,920	16	38.3
25–34	11,057	16	48.2
35–44	8,634	35	135.1
45–54	9,605	63	218.6
55–64	5,630	33	195.4
65 and over	3,302	12	121.1
Total	67,990	181	88.7

TABLE 9

Tuberculosis Mortality, White Female Population, by Economic Status and Age, Buffalo, 1939–1941

Economic Quarter No. 1 (Highest)

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	3,734	2	17.8
5–14	8,760	0	0
15–24	11,844	10	28.1
25–34	12,446	16	42.8
35–44	13,126	5	12.7
45–54	11,311	3	8.8
55–64	7,724	11	47.5
65 and over	6,829	6	29.3
Total	75,774	53	23.3

Economic Quarter No. 2

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	4,233	2	15.7
5–14	9,940	1	3.4
15–24	11,651	19	54.4
25–34	11,666	14	40.0
35–44	10,918	9	27.5
45–54	9,621	6	20.8
55–64	6,197	6	32.3
65 and over	5,111	3	19.6
Total	69,337	60	28.8

Economic Quarter No. 3

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	5,083	3	19.7
5–14	11,758	0	0
15–24	13,968	14	33.4
25–34	12,556	16	42.5
35–44	10,617	16	50.2
45–54	9,637	14	48.4
55–64	6,492	3	15.4
65 and over	5,613	7	41.6
Total	75,724	73	32.1

Economic Quarter No. 4 (Lowest)

Age	Population	Tbc deaths 1939–1941	Annual Tbc mortality rate per 100,000
Under 5	4,671	6	42.8
5–14	10,930	4	12.2
15–24	14,057	26	61.7
25–34	10,420	19	60.8
35–44	7,883	13	55.0
45–54	7,397	5	22.5
55–64	3,903	4	34.2
65 and over	2,888	7	80.8
Total	62,149	84	45.1

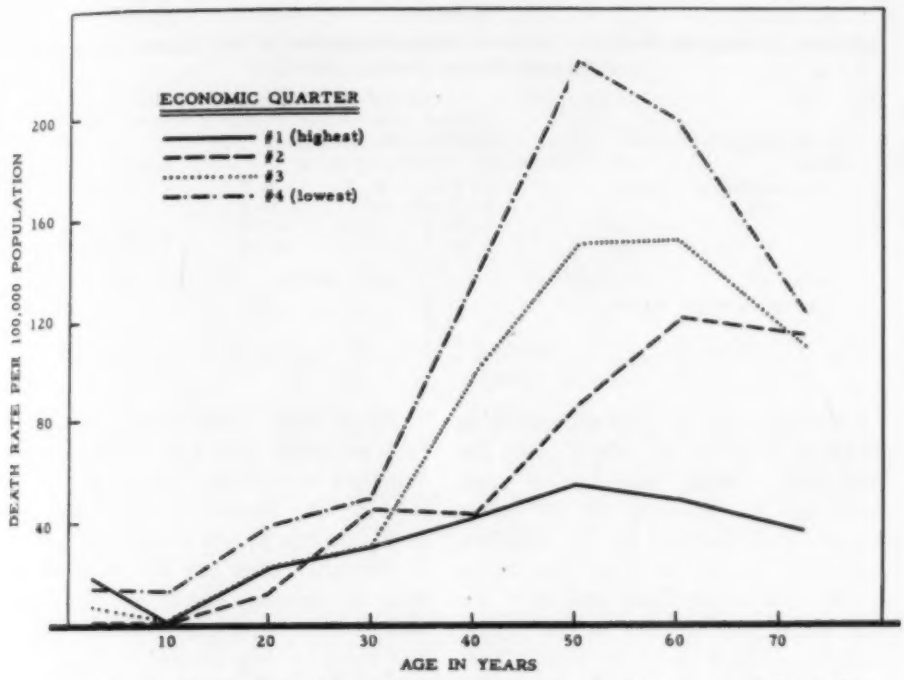


CHART 3 - Tuberculosis Mortality Rates, White Males, by Economic Quarter - Buffalo, 1939-41

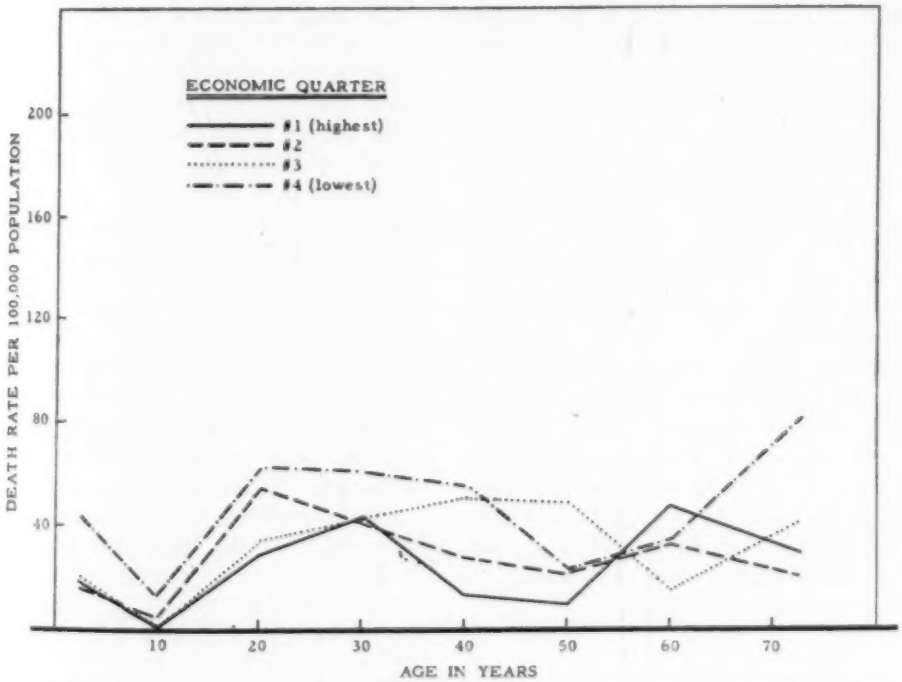


CHART 4 - Tuberculosis Mortality Rates, White Females, by Economic Quarter - Buffalo, 1939-41

TABLE 10

Adjusted Tuberculosis Mortality Rates of White Population by Sex, Major Age Groups, and Economic Status, Buffalo, 1939–1941

Sex and Economic Status	Adjusted Tuberculosis Mortality Rates		
	Under 35 years	35 years and over	Total
Males			
Economic Quarter 1 (highest)	17.3	46.7	30.3
2	17.0	80.9	45.4
3	16.3	125.9	64.9
4 (lowest)	31.1	172.4	93.8
Females			
Economic Quarter 1 (highest)	23.9	20.8	22.6
2	32.3	25.2	29.2
3	25.8	41.5	32.7
4 (lowest)	46.2	45.3	45.8

The magnitude of these differences is indicated in Table 10, which gives the tuberculosis death rates below and above age 35, adjusted to the entire population of Buffalo as the standard population. It will be noted that below age 35, the tuberculosis mortality for both males and females in the lowest economic quarter is about double that in the highest quarter. Likewise, in females age 35 and over, the mortality in the lowest economic quarter is a little more than double that in the highest quarter. But for males age 35 and over, the mortality in the lowest economic quarter is almost four times as great as in the highest quarter.

The difference in tuberculosis mortality between the highest and lowest economic quarters is statistically significant * for all groups, i.e., for males 35 years and over, females 35 and over, males below 35, and females below 35. However, only in males 35 years and over are all the differences in mortality between each economic quarter and the next highest economic quarter statistically significant. It is fair to conclude, therefore, that the differences in mortality for males 35 years and over among the different economic groups are significantly greater than for females in the same age classification.

These data indicate that the high male mortality after age 35 is not merely a matter of economic status *per se*. If it were, the females in the lower economic groups should show a similar rise in mortality after age 35. It is reasonable to assume, therefore, that other factors associated with economic status, but more or less limited to males, are responsible for the differences found in the four economic groups of males after age 35.

The most striking difference in the mode of life of adult men and women relates to occupational status. In Buffalo in 1940, 62 per cent of the 226,704 males age 14 years and over were employed, while of the 235,587 females age 14 and over, only 23 per cent were employed and 55 per cent were engaged in housework in their own homes. Also, Table 11 shows that in 1940, 57 per cent of the employed males in the highest economic quarter in Buffalo were professional workers; semi-professional workers; proprietors, managers, and officials; and clerical, sales and kindred workers. Only 18 per cent of the employed males in the lowest quarter were in these categories. On the other hand, 50 per cent of the employed males in the lowest economic quarter were classified in the 1940 census as operatives and laborers, as compared with only 17 per cent in the highest quarter.

There are several factors associated

* A difference of two or more standard deviations was considered statistically significant.

TABLE 11

Occupational Status of Employed Males in Each of the Four Economic Quarters, Buffalo 1940 (U. S. Census) *

Economic Quarter	Per cent of Total: Professional; Semi-Professional; Proprietors, Managers, and Officials; Clerical, Sales and Kindred Workers	Per cent of Total: Operatives and Laborers
1 (highest)	57.3	16.9
2	32.4	31.7
3	26.3	38.6
4 (lowest)	18.4	49.5

* Includes both whites and non-whites. Data not available for whites only.

with occupation which might be considered to contribute to the differences found. It might be postulated, for example, that the higher tuberculosis mortality among adult men in the low income groups is due to their position as family breadwinners who are therefore more likely to postpone needed hospitalization than are women in the same strata. While this explanation appears reasonable, some doubt is cast on its validity by the fact that Sydenstricker discovered the phenomenon of disproportionately high tuberculosis mortality among adult wage earning males in 1911–1916, when the sanatorium movement was in its infancy and hospitalization for tuberculosis could not therefore be expected to play a significant role in reducing mortality.

It is conceivable that silicosis may play some part in the differences found. While industry in Buffalo is for the most part apparently not of the character associated with silicosis, there is no definite information at this time concerning the extent of the hazard and the actual incidence of silicosis in the area.

It is also possible that there are larger differences in extra-familial exposure to tuberculosis among males in the four economic groups than among females. This factor may play a definite role but is somewhat difficult to evaluate.

A major consideration which may help explain the findings relates to the adverse effects of overexertion on patients with tuberculosis. Physical overstrain is characteristic of the tasks of the unskilled laborers who make up 50 per cent of the employed males in the lowest economic quarter of Buffalo and only 17 per cent of employed males in the highest quarter. The importance of overexertion in the prognosis of tuberculosis has long been recognized; it forms the basis for our therapeutic approach to the disease; and in recent years has influenced greatly our thinking with respect to rehabilitation. It has become very clear that a recovered tuberculosis patient cannot be returned to an occupation requiring strenuous physical exertion without running serious risks of early breakdown and recurrence. The result has been an emphasis on retraining patients for occupations requiring less physical exertion and on the development of sheltered workshops. It would appear logical therefore to suggest that physical overstrain plays an important role in the disproportionately high tuberculosis mortality among adult males in the lower income groups.

It must be recognized however that this brief discussion of possible explanations for the high tuberculosis mortality of low-income adult males is on a speculative level. The conditions of the study did not permit isolation of the individual factors in order to determine their relative influence.

SUMMARY AND CONCLUSIONS

1. Numerous studies have shown the

close correlation of occupational class and economic status with tuberculosis mortality and disability.

2. Analysis of tuberculosis mortality by age, sex, and economic status in Buffalo, 1939–1941, indicates that the inverse correlation of economic status with tuberculosis mortality is greater for adult males than for adult females.

3. It is concluded therefore that economic status *per se* is not the only factor involved, but that conditions of occupation probably have an important effect. Various aspects of occupational environment are discussed, and it is suggested that the factor of physical overstrain plays a significant role.

4. It is recommended that similar studies be conducted in other cities to test the general validity of the findings, and that further studies be instituted to isolate the various factors, if possible, in order to determine their relative influence on tuberculosis mortality.

REFERENCES

1. Sydenstricker, E. *Health and Environment.* New York: McGraw-Hill, 1933, p. 96.
2. Britten, R. H. Mortality Rates by Occupational Class in the United States. *Pub. Health Rep.* 49, Sept. 21, 1934, p. 1101, ff.
3. Collins, S. D. Economic Status and Health. *Pub. Health Bull.* 165, U. S. Public Health Service, Washington, 1926, p. 40.
4. *Papers of Charles V. Chapin, M.D.* New York: The Commonwealth Fund, 1934, p. 222.
5. Green, H. W. *Tuberculosis and Economic Strata, Cleveland's Five-City Area, 1928–1931,* Anti-Tuberculosis League of Cleveland, 1932.
6. Disability from Specific Causes in Relation to Economic Status. National Health Survey, Preliminary Reports, Sickness and Medical Care Series, *Bull. 9,* U. S. Public Health Service, Washington, 1938, p. 7.
7. Collins, *op. cit.,* p. 36.
8. Green, *op. cit.,* p. 9 ff.
9. Sydenstricker, *op. cit.,* p. 145.
10. Yerushalmy, J., and Silverman, C. Tuberculosis Mortality in Communities of Different Size. *Am. Rev. Tuberc.* 51:413 (May), 1945.

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WITH THE ASSISTANCE OF

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ATTEMPTS have been made for over 50 years to relate the prevalence of rheumatic fever and rheumatic heart disease to climate and special types of living conditions. From an epidemiological standpoint these two environmental influences are closely associated, in that temperature, rainfall, and altitude, or so-called macro-climate,† are important factors in influencing the extent to which people spend their time indoors, and these in turn influence crowding and spread of droplet infection. On the other hand, the living conditions in which we are interested here refer to the immediate surroundings of the individual, whether urban or rural, the environment within his home including dampness, crowding, food, and clothing.

The previous studies which have attempted to relate urban living conditions with the prevalence of rheumatic fever are many and variable. They include those of Perry and Roberts in Bristol, England,[2] the British Medical Association in England,[3] Hedley in Philadelphia,[4] Clark in Dublin, Ireland,[5] Maddox in New South Wales, Australia,[6] and many others. Some of these studies have been summarized in a review on the general subject of the Epidemiology of Rheumatic Fever which appeared in 1943.[7] The conclusions to be drawn from the summary of the literature at that time, which covered a series of observations made over a period of perhaps 60 years, were, that along with other factors, environmental or living conditions do play a part in determining the prevalence of rheumatic fever. Thus, evidence has been cited which supports the view that the prevalence of rheumatic fever is higher in low income areas than in areas occupied by higher income groups and in urban than rural areas. It has also been thought that damp living quarters seem to furnish opportunity for the spread of the disease, but this observation has not been corroborated by all who have attempted to evaluate its importance. Dietary deficiencies likewise have been considered by some as a predisposing factor in this disease. Since 1943 there have been a few new observations on this subject, notably those of the Wedums.[8] Their study again emphasized the importance of low income and crowding in the genesis of rheumatic fever. In general then,

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† The terms macro-climate and micro-climate have been used to designate "epidemiological climates" by Poynton,[1] and have been attributed by him to Danisvewsky of Moscow. According to their interpretations macro-climate is climate in the ordinary meteorological sense—temperature, rainfall, and altitude, whereas micro-climate is the sum of the intimate sociological and domiciliary conditions wherein a given individual finds himself or herself.

it has been thought that crowded urban living conditions do represent the best setting in which rheumatic fever and streptococcosis may flourish.* In accepting this view, however, it would seem that acutally none of the studies reported so far have proved conclusively the importance of crowding within an urban environment.

In the present study an attempt has been made to meet this objection and to carry out observations which would be acceptable from a biostatistical point of view. The purpose has been to select and examine comparable rural and urban populations from a single small area of the United States and to determine as accurately as possible the rates for rheumatic heart disease in each population. The primary assumption was that within this small area (the State of Connecticut), the variations of climate and altitude are not large enough to be significant, and so an answer to the first question can be properly sought; namely, can one demonstrate significant differences in the prevalence of rheumatic heart disease between these two groups of children, one rural and the other urban, exposed to the same macroclimate but different micro-climates. Other questions to be answered are: what is the effect of living conditions within high and low rental areas in cities, and what effect does crowding in the home have on the prevalence of rheumatic heart disease. And finally, what is the familial incidence of rheumatic fever and rheumatic heart disease in this geographical area?

* In this study it is recognized from the outset that the concept of rheumatic fever as a separate and specific clinical entity is no longer tenable, for such a close relationship has been established between rheumatic fever and infections of the upper respiratory tract due to the hemolytic streptococcus, that it is now obvious that the epidemiology and pathogenesis of both diseases are closely related. The general relationships between streptococcal infections of the upper respiratory tract and rheumatic fever will not be considered in this study. It will be assumed nevertheless, that rheumatic fever is one of the manifestations of streptococcosis,[9] and that indefinite as the diagnosis of rheumatic fever may be, it can be discussed as a clinical entity. Rheumatic heart disease, however, is a rather distinct clinical manifestation of the disease called rheumatic fever, and its prevalence can be measured.

METHODS

Previous surveys on the prevalence of rheumatic heart disease in school children have employed methods which were comparable to those used in this study. They include those of Paul, *et al.*,[10] Paul and Dixon,[11] Paul and Deutsch,[12] the Wedums,[8] Sampson, *et al.*,[13] and Quinn.[14]

A. *Geographical area or locale*—The survey was confined to the geographical limits of the State of Connecticut.

B. *Selection of age group to be examined*—Children of both sexes in the 7th and 8th grades of Connecticut Public Schools only were included in the study. Their ages range from 11 through 15, with the average around 13. This seemed to be an optimal age group for this study because the children already had passed the age at which rheumatic fever usually is acquired (7–10 years) and there had been an interval period during which they might develop recognizable rheumatic heart disease.

C. *Methods for selecting schools*—The original plan was to select and examine 1,000 rural and 1,000 urban school children. Eventually a somewhat larger group was selected. The representative sample of rural children was chosen from widely scattered areas throughout the state. Urban children were selected from the cities of Ansonia, Bridgeport, Hartford, and Waterbury. An effort was made to select adequate samples from the low, medium, and high rental areas of these cities. (For a complete description of these methods see the appendix.)

D. *Organization*—As soon as the individual schools had been selected, letters explaining the survey and asking permission to carry out the study were sent to the school superintendent, the school health officer (or city health de-

partment in some schools without school physicians), the school nurse and principal. These letters were followed by a visit from the survey physician and social worker to explain further the purpose of the survey and make arrangements for the examination place and date.

Permission blanks for the patient's signature were given to the school nurse for distribution. No child was examined without the permission of the parents. Coöperation between the nurses, teachers, principals, superintendents, and physicians proved to be excellent.

E. *Examinations*—At the appointed time examinations were carried out in the most suitable place. In some country schools, a section of the room was screened off and desks were pushed together to serve as an examining table. Whenever possible, the school nurse aided in the examination. When there was no school nurse, the social worker (J.P.Q.) performed the nurse's duties. Parents were invited to attend the examinations but did so in a small (less than 5) per cent of the examinations.

Medical and social histories were taken by the social worker (J.P.Q.) and the medical history was taken in more detail by the physician in all cases of cardiac suspects, and in those who gave a history of previous rheumatic fever, chorea, or any illness resembling rheumatic fever. After the history taking, the child was examined. Screens were used to insure privacy, and gowns were furnished for the girls. The examination was confined to the cardiovascular system. All examinations were carried out by the same physician. (R.Q.)

F. *Determination of statistical significance*—(Methods of selection of schools and statistical analyses were supervised by J.H.W.) The chi-square test [15] was used throughout, to determine the statistical significance of the observed rates for rheumatic heart disease, potential heart disease, etc. The value of P, the probability corresponding to the computed chi-square was determined from a graph devised by the Department of Pharmacology, Yale University. Values of chi-square corresponding to a probability of 0.05 or less were considered as indicating significant deviations from expectation.

G. *Reporting of cases*—All cases of rheumatic heart disease, possible heart disease, congenital heart disease, and possible congenital heart disease, as well as children with a past history of rheumatic fever were reported to the Division of Crippled Children of the Department of Health of the State of Connecticut. About half of the cases of rheumatic heart disease had not been recognized previously. In this manner the study served as a valuable case finding measure.

CRITERIA

A. *Diagnostic Criteria*—The criteria which were used to establish a diagnosis of rheumatic heart disease, unexplained murmurs, rheumatic fever, possible heart disease, and congenital heart disease are described below. These diagnoses were based on single clinical observations almost entirely, in that supplementary roentgenographic and electrocardiographic examinations were not done. An attempt was made to estimate the heart size of each child by measuring the point of maximum impulse and the relative cardiac dullness.

Mitral insufficiency—This diagnosis was made in the presence of a relatively high-pitched, moderately loud to very loud, systolic, apical murmur beginning early in systole immediately after the first heart sound and transmitted to the left axilla.

Mitral stenosis was considered to be present when a low-pitched, rumbling, soft, to moderately loud, diastolic apical murmur with or without presystolic accentuation was heard. The second

sound in the pulmonic area was accentuated.

Aortic insufficiency was indicated by a rather soft, high-pitched, blowing, diastolic murmur heard best along the left sternal border or over the sternum in the 3rd and 4th left interspaces. This murmur was heard best with the patient's breath held in expiration and the patient bent forward while in the sitting position. Increased pulse pressure, a collapsing (Corrigan) pulse, capillary pulsation, and pistol shot sounds over the femoral arteries were not always present, but helped to establish the diagnosis when they were present.

Unexplained or so-called functional murmurs were nearly always systolic in time. They were soft to moderately loud, heard most frequently at the base of the precordium in the pulmonic area, next most frequently medial to the apex, and least frequently along the left sternal border. The murmurs were well localized and only slightly accentuated by exercise or change of posture.

History of rheumatic fever—Children who gave a reasonably clear past history of rheumatic fever or chorea were classified under the heading of " History of Rheumatic Fever." It was not often possible to corroborate the accuracy of these histories by interviewing the child's parents or physician and therefore the degree of accuracy of this classification is probably not high.

Family history of rheumatic fever—A positive family history of rheumatic fever was recorded when there was a reasonably good story of rheumatic fever, chorea, or rheumatic heart disease in any of the child's parents, siblings, aunts, uncles, or cousins.

Congenital heart disease—It is often impossible to establish a correct anatomical diagnosis in congenital heart disease on the basis of physical findings alone; however, when the physical signs of congenital heart disease were clear-cut, the diagnosis was made.

Possible heart disease—Certain cases have been classified as either possible congenital heart disease or possible rheumatic heart disease, depending on the physical findings.

B. *Criteria for crowding within homes*—The degree of crowding was determined on the basis of number of persons per room within each child's home. Crowding was designated as existing in urban homes when there was less than one room per person; and in rural homes when the number of rooms was two less than the number of occupants. The decision to make this differentiation between crowding in rural and urban homes was reached after interviewing the children, school nurses, and teachers, as well as personal observation of many of the rural homes. It was evident that a family of nine living in a large eight room farm house was not crowded. Actually crowding is difficult to estimate and it is evident that both rural and urban children are exposed to crowding in varying degrees in their homes and sleeping quarters as well as elsewhere. Crowding in rural homes was probably more frequent than the figures indicate since it was observed that many rural families closed off part of their homes during winter months and lived in the few heated rooms: this practice makes for crowding regardless of the number of rooms in the home. It was also observed that the rural child is exposed to crowding when he rides in school buses or attends a one-room school house which is poorly ventilated in winter months. Many rural children attended consolidated schools which were similar to urban schools in ventilation and number of students per room. The urban child regardless of the rental area in which he lives is exposed to crowding in the schools, theaters, public conveyances, and school buses.

Race—All the children were either white or Negro except in a single instance of a Chinese child. No attempt

TABLE 1

Results of Interviews and Examinations of 3,141 Rural, Semi-rural, and Urban 7th and 8th Grade Connecticut School Children During the Years 1946–1947

Location of Home	Type of School Population: Race			Type of School Population: Sex		History			Diagnosis				
	White	Negro	Other	Male	Female	History of Rheumatic Fever	Family History of Rheumatic Fever or Rheumatic Ht. Dis.	Crowding Present in the Home	Unexplained Murmurs	Possible Rheumatic Heart Disease	Rheumatic Heart Disease	Congenital Heart Disease	Total Number Observed
Rural													
Observed no.	1,085	7	..	563	529	23	49	128	369	25	18	2	1,092
Per cent	(99.4)	(0.6)	..	(51.6)	(48.4)	(2.1)	(4.5)	(11.7)	(33.8)	(2.3)	(1.6)	(0.2)	
Semi-Rural													
Observed no.	138	..	..	74	64	4	10	15	47	4	2	2	138
Per cent	(100.0)	..	..	(53.6)	(46.4)	(2.9)	(7.2)	(10.9)	(34.1)	(2.9)	(1.4)	(1.4)	
Urban													
Observed no.	1,812	98	1	1,014	897	38	88	610	563	82	47	14	1,911
Per cent	(94.8)	(5.1)	(0.1)	(53.1)	(46.9)	(2.0)	(4.6)	(31.9)	(29.5)	(4.3)	(2.5)	(0.7)	
Total													
Observed no.	3,035	105	1	1,651	1,490	65	147	753	979	111	67	18	3,141
Per cent	(96.6)	(3.3)	(0.03)	(52.6)	(47.4)	(2.1)	(4.7)	(24.0)	(31.2)	(3.5)	(2.1)	(0.6)	

TABLE 3

Comparative Analysis of Results in 1,911 Children Living in Urban Low Rental, Medium Rental, and High Rental Areas

Location of Home	Type of School Population: Race			Type of School Population: Sex		Total Number Observed	Medical History			Diagnosis			
	White	Negro	Other	Male	Female		History of Rheumatic Fever	Family History of Rheumatic Fever or Rheum. Heart Dis.	Crowding in the Home	Unexplained Murmurs	Possible Rheumatic Heart Disease	Rheumatic Heart Disease	Congenital Heart Disease
Low Rental Areas													
Observed no.	1,007	92	1	562	538	1,100	22	56	470	310	55	28	9
Per cent	(91.5)	(8.4)	(0.1)	(51.1)	(48.9)		(2.0)	(5.1)	(42.7)	(28.2)	(5.0)	(2.5)	(0.8)
Medium Rental Areas													
Observed no.	597	6	..	343	260	603	14	32	124	190	21	16	5
Per cent	(99.0)	(1.0)	..	(56.9)	(43.1)		(2.3)	(5.3)	(20.6)	(31.5)	(3.5)	(2.7)	(0.8)
High rental Areas													
Observed no.	208	..	..	109	99	208	2	10	16	62	6	3	0
Per cent	(100.0)	..	..	(52.4)	(47.6)		(1.0)	(4.8)	(7.7)	(29.8)	(2.9)	(1.4)	0

was made to classify them according to nationality groups.

RESULTS

The survey was begun in the first week of October, 1946, and completed during the second week of June, 1947. The survey team (R.Q. and J.P.Q.) travelled approximately 10,000 miles. Thirty-one hundred and forty-one children in the 7th and 8th grades were interviewed and examined—of this number 1,092 were rural school children, 138 semi-rural, and 1,911 urban.

General Rates—A general compilation of data relating to the three groups of children (rural, semi-rural, and urban) appears in Table 1. From this table it appears that the rheumatic heart disease rates are 1.6, 1.4, and 2.5 per cent respectively, and it would seem that the prevalence of both rheumatic heart disease (2.5 per cent) and possible rheumatic heart disease (4.3 per cent) is higher in the urban than the rural group of children, but when the chi-square test was applied, these differences were not statistically significant.

Urban Rates—An attempt was made to analyze further the results of the examinations of the urban children from the cities of Bridgeport, Hartford, Waterbury, and Ansonia. In the first three cities the rheumatic heart disease rates (average of 3 cities 2.13 per cent) did not differ significantly; but a significantly higher rate was found in Ansonia (5.02 per cent). These data, shown in Table 2 will be discussed later. For this analysis the urban children were classified into three groups, namely, those living in low, medium, and high rental areas (Table 3). The rheumatic heart disease rates in these rental areas were 2.5, 2.7, and 1.4 per cent respectively, but the differences were not statistically significant. In reference to this table, it should be pointed out that the degree of crowding increased markedly from the high rental areas to the low rental sections. The observed incidence of rheumatic heart disease and possible rheumatic heart disease and family history of rheumatic heart disease tends to be higher in the low rental

TABLE 2

Number and Per cent of Children with Rheumatic Heart Disease Living in Ansonia, Compared with Children Living in Hartford, Bridgeport, and Waterbury

	+ R.H.D.			
City	*Observed No.*	*Rate*	*No R.H.D.*	*Total*
Ansonia	9	5.02%	170	179
Hartford, Bridgeport, + Waterbury	38	2.13%	1,694	1,732
Total 4 Cities	47	2.45%	1,864	1,911

chi-square = 5.43
P = 0.021 significant

TABLE 4

Observed Number and Per cent of Rheumatic Children Living in Crowded and Non-crowded Urban and Rural Homes

	+ R.F. or R.H.D.				
Location of Home	*Obsvd. No.*	*Per cent*	*No R.F. or R.H.D.*	*Total*	*Chi-Square*
Urban					
Crowding	36	5.90	574	610	
No Crowding	51	3.92	1,250	1,301	3.75
Total	87	4.55	1,824	1,911	
Rural					
Crowding	8	6.25	120	128	
No Crowding	33	3.42	931	964	2.50
Total	41	3.75	1,051	1,092	

chi-square = 6.25
P = 0.044
significant

areas, as opposed to the high rental group, but here again when these differences are analyzed statistically, the variations are not significant.

Crowding—In Table 4 is shown the effect of crowding on the number and per cent of rheumatic children. The number of rheumatic children living in crowded homes, regardless of the rural or urban location of the home, was significantly higher than the number in non-crowded homes.

The percentage of children with unexplained murmurs (approximately 30 per cent) was similar among the rural, semi-rural, and urban groups of children.

The relatively small number of 18 children with congenital heart disease is in keeping with general pediatric experience—rheumatic heart disease being by far the most common type of heart disease in children above the age of 5 years.

TABLE 5

Anatomical Diagnoses in 67 Cases of Rheumatic Heart Disease (R.H.D.)

Diagnosis	*Male*	*Female*	*Total*
Mitral Insufficiency			
Observed number	33	20	53
Per cent of Total Number with R.H.D.	(49.3)	(29.9)	(79.1)
Aortic Insufficiency			
Observed number	2	3	5
Per cent of Total Number with R.H.D.	(3.0)	(4.5)	(7.5)
Mitral Insufficiency and Stenosis			
Observed number	3	2	5
Per cent of Total Number with R.H.D.	(4.5)	(3.0)	(7.5)
Mitral and Aortic Insufficiency			
Observed number	3	..	3
Per cent of Total Number with R.H.D.	(4.5)	..	(4.5)
Mitral Stenosis and Aortic Insufficiency			
Observed number	1	..	1
Per cent of Total Number with R.H.D.	(1.5)	..	(1.5)
Total			
Observed number	42	25	67
Per cent of Total Number with R.H.D.	(62.7)	(37.3)	(100)

Among the 147 children with a positive family history of rheumatic fever, 12.9 per cent had a personal history of rheumatic fever or had evidence of rheumatic heart disease, as compared with 3.8 per cent among children with a negative familial history of rheumatic fever or rheumatic heart disease. This highly significant difference has been demonstrated by others many times.

The anatomical diagnoses of the cases of rheumatic heart disease are recorded in Table 5. Mitral insufficiency was by far the most common form of rheumatic heart disease. The difference between the per cent of males and females with rheumatic heart disease was not statistically significant.

DISCUSSION

The results of this study would indicate that rheumatic fever and rheumatic heart disease are common and widespread among Connecticut school children. One and six-tenths per cent represents a close approximation to the true rheumatic heart disease rate for rural Connecticut School Children in the 7th and 8th grades within the confidence limits of 0.89 and 2.39. All that can be said of the urban rheumatic heart disease rate of 2.5 per cent is that it is the rate for a sample of children taken from the four cities of Ansonia, Bridgeport, Hartford, and Waterbury. The failure to find significant differences between the rheumatic heart disease rates

for rural (1.6 per cent) and urban children (2.5 per cent), between the rates for children living in the low (2.5 per cent), medium (2.7 per cent), or high (1.4 per cent) urban rental areas, or even between the rates for rural children (1.6 per cent) and urban low rental area children (2.5 per cent) would suggest that the epidemiological factors which control the prevalence of rheumatic fever are today (in 1946-1947) common to both rural and urban Connecticut as well as to different rental areas in the four cities studied. These findings in general do not support the usual concept that the prevalence of rheumatic fever is highest in congested, low income urban areas. However, it should be pointed out that a larger number of observations might have made the observed differences statistically significant.

As shown in Table 2, the rheumatic heart disease rate for Ansonia, one of the cities chosen for study (5.02 per cent), was considerably higher than the observed rates for the other three cities (2.13 per cent). A similar high rate for Ansonia was found in a previous survey in 1940.[12] The reasons for this difference are not clear. It cannot be attributed to a higher familial incidence of rheumatic fever or a higher degree of crowding among the children examined, or a higher rheumatic fever rate in the Ansonia group of children, because the observed incidence of family history of rheumatic fever, crowding, and past history of rheumatic fever in the Ansonia group were not significantly different from the rates observed in the three larger cities.

Although this study was not designed to investigate all possible epidemiological factors in rheumatic fever and rheumatic heart disease in Connecticut, certain observations on the effect of crowding on these rates were made, and here, in contrast to the fact that differences in rheumatic heart disease rates between urban versus rural environments, and between high and low rental areas are not significant, the effect of crowding within the home does appear to be significant. The data in Table 4 indicate that the number of rheumatic children (children with rheumatic heart disease or a history of rheumatic fever) living in crowded homes is significantly higher than the number of rheumatic children living in non-crowded homes, regardless of the rural or urban locations of the home. These observations suggest that for rheumatic children the risk of contracting rheumatic fever was just as great in a crowded rural home as in a crowded urban home. On the other hand, crowding in the home was over three times as common in urban as in rural and semi-rural homes; in low rental area urban homes, crowding was twice as frequent as in medium rental area homes, and six times as common as in high rental area homes; yet there was no significant difference in the rheumatic heart disease rates for children living in any of these areas.

How can these differences be interpreted? The data do support the idea that crowding within the home is related to an increased prevalence of rheumatic heart disease, and that environmental influences are important in determining its presence. These findings are in keeping with those of Perry and Roberts.[2] Whether environmental, social, and economic conditions have changed, or for other reasons, these data do not support the statement based on data collected some 30 years ago that rheumatic fever is 30 times as common in industrial as in rural towns.[16] Today, outside the home, the micro-climate in which a child lives is apparently much the same for all children, regardless of the rural or urban area in which they live. In this observation lies a possible explanation of the previously mentioned differences.

SUMMARY AND CONCLUSIONS

1. The results of a rheumatic heart disease survey of a sample of rural, semi-rural, and urban Connecticut school children have been presented in which analyses were made for rates in urban versus rural areas, urban low rental areas versus high rental areas, and crowding versus absence of crowding.

2. The rheumatic heart disease rate for the sample of rural children examined was 1.6 per cent, for semi-rural children 1.4 per cent, and for the sample of urban children living in the Connecticut cities of Ansonia, Bridgeport, Hartford, and Waterbury, it was 2.45 per cent. The differences between the rural, semi-rural, and urban rates are not statistically significant.

3. The rheumatic heart disease rate for children in one city—Ansonia—of 5.02 per cent was significantly higher than the rural rate or combined rate found in Bridgeport, Hartford, and Waterbury. The reasons for these differences are not known, but they are in

TABLE 6

Rural Counties, Towns, Number of Schools Included in the Survey, and Number of Children Examined

County	*Town*	*No. Schools*	*No. Examined*
Hartford	Burlington	3	48
	Hartford	2	19
	Granby	4	69
	East Granby	2	21
			157
Litchfield	Woodbury	1	50
	Harwington	3	42
	Washington	2	47
	Morris	1	22
	Roxbury	1	14
			175
New Fairfield	Brookfield	1	36
	New Fairfield	1	33
			69
New Haven	Southbury	1	52
	Oxford	3	34
			86
Middlesex	Westbrook	1	30
	Middlefield	1	47
			77
New London	North Stonington	1	30
	Ledyard	1	19
	Bozrah	1	16
	Lisbon	1	35
	Lebanon	1	57
			157
Windham	Ashford	1	22
	Chaplin	1	17
	Woodstock	1	78
			117
Tolland	Somers	1	59
	Ellington	3	59
	Andover	1	24
	Columbia	2	25
	Coventry	3	87
			254
Total		45	1,092

keeping with previously expressed ideas that this disease does flourish more in certain localized places than in others.

4. The rheumatic heart disease rate for urban children living in low rental areas was 2.5 per cent, in medium rental areas 2.7 per cent, and in high rental areas it was 1.4 per cent. These differences were not statistically significant and, furthermore, there was no significant difference between the rheumatic heart disease rate for low rental area urban children and the similar rate for rural children.

5. One feature which did stand out was the effect of crowding within the home which was apparently an important factor influencing the prevalence of rheumatic heart disease; the rate in crowded homes being almost twice that in non-crowded homes.

6. The other findings of the survey failed to show significant differences, with the exception of familial history of rheumatic fever or rheumatic heart disease which was significantly higher among rheumatic children.

APPENDIX

1. Selection of sample of rural children—

In estimating the size of the sample needed to make the study statistically valid, the following conclusions were drawn:

a. If 1,000 rural children were examined and the incidence of rheumatic heart disease was somewhere about 1.3 per cent (the rate from a previous rheumatic heart disease survey in rural Connecticut school children), then the true value in the population would be between 0.6 and 2.0 at the confidence level of 0.05.

b. For the true population value to be within 10 per cent of 1.3 per cent, 29,000 observations would be needed at the same confidence level.

c. For the true population value to be within 100 per cent of 1.3 per cent, i.e., 0 to 2.6, 290 observations would be needed at the same confidence level.

Because of time and personnel limitations, it was decided to limit the sample of rural children to about 1,000. Actually, 1,092 rural children were examined, and 18 were found to have rheumatic heart disease (1.64 per cent). The confidence limits were calculated as 0.89 and 2.39 by the usual method.[15]

2. In order to secure a representative cross-section of the rural population, stratification by geographical areas throughout the state by counties was done. The towns and schools selected, and the number examined in each school are shown in Table 6.

Accordingly selection of 81 minor divisions within the 8 Connecticut counties was made on the basis of "rurality" judged from the U. S. Census figures for 1940.[17] In the towns selected over 25 per cent of the population were engaged in farming, and many more families were living in the country although not actually engaged in farming. No towns with over 0.18 persons per acre were selected.

3. Selection of a representative cross-section of the rural population within each county—

a. Determination of the number to be drawn from each county:

(1) Rural towns were classified by counties.

(2) The rural school population in each county was determined from data furnished by the State Board of Education.

(3) These numbers of children were expressed in percentages of the total rural population of the state.

(4) The total sample size (1,000) was then multiplied by those percentages to give the sample needed from each county.

b. Cluster sampling within each county was then carried out:

(1) The number of rural schools in each county was obtained.

(2) The 7th and 8th grade population in these schools was secured from local school superintendents.

(3) To obtain the average number of 7th and 8th grade pupils in each school in the county b(2) was divided by b(1).

(4) To determine the number of schools necessary to select, the sample size a(4) was divided by b(3).

(5) Selection of specific schools was done by random sampling, e.g., if 9 schools were necessary out of 34 schools—these schools were selected by use of random numbers.

c. Selection of sample of urban children.

Three of Connecticut's largest cities—Hartford, Waterbury, and Bridgeport—plus one smaller city, Ansonia, were chosen. An attempt was made to select schools within these cities which were representative of low, medium, and high rental areas. An arbitrary

division was made on the basis of average monthly rentals of $0–$29 for the low rental areas, $30–$69 for the medium group, and $70 and over for the high rental group. This division into three rental areas was used as a rough guide to relative family income, housing, food and clothing budget, etc. Average monthly rentals were determined from Housing Analytical Maps.[18] In addition, following examination, each child was located in the correct rental area by his address. This was accomplished through the combined use of the Housing Analytical Map and the city street guide and map. This was not possible for Ansonia where a housing map or city street guide was not available. In this city children were placed in the correct rental area by data furnished by the school nurse supplemented by personal observation of each child's home by the social worker.

REFERENCES

1. Poynton, F. J. A Note on the Social Aspects of Rheumatism. *M. J. Australia*, 1:555, 1938.
2. Perry, C. B., and Roberts, J. A. F. *Supplement Brit. M. J.* 2:154 (Aug. 28), 1937.
3. Savage, W. G. Incidence of Rheumatic Heart Disease in Childhood (1927–1930) in Gloucestershire, Somerset, and Wilts. *Supplement Brit. M. J.* 37 (July 18), 1931.
4. Hedley, O. F. Rheumatic Heart Disease in Philadelphia Hospitals. *Pub. Health Rep.* 55:1845 (Oct. 11), 1940.
5. Clarke, P. J. H. Clinical and Public Health Aspects of Juvenile Rheumatism in Dublin. *Irish J. M. Sc.*, 1940, p. 97.
6. Maddox, K. Metropolitan and Rural Incidence and Distribution of Acute Rheumatism and Rheumatic Heart Disease in New South Wales. *M. J. Australia* 1, 1937.
7. Paul, J. R. *The Epidemiology of Rheumatic Fever and Some of its Public Health Aspects.* 2nd. ed. Metropolitan Life Insurance Co., 1943.
8. Wedum, A. G., and Wedum, B. G. Rheumatic Fever in Cincinnati in Relation to Rentals, Crowding, Density of Population, and Negroes. *A.J.P.H.* 34:1065 (Oct.), 1944.
9. Boisvert, P. L., Darrow, D. C., Powers, G. F., and Trask, J. D. Streptococcosis in Children—A Nosographic and Statistical Study. *Am. J. Dis. Child.*, 64:516 (Sept.), 1942.
10. Paul, J. R., Harrison, E. R., Salinger, R., and DeForest, G. K. The Social Incidence of Rheumatic Heart Disease in New Haven School Children. *Am. J. M. Sci.* 188:301, 1934.
11. Paul, J. R. and Dixon, G. L. Climate and Rheumatic Heart Disease. *J.A.M.A.* 108:2096, 1937.
12. Paul, J. R., and Deutsch, J. V. *Rheumatic Fever in Connecticut. A General Survey.* Conn. State Dept. of Health, Hartford, Conn., 1941.
13. Sampson, J. J., Hahman, P. T., Halverson, W. L., and Shearer, M. C. Incidence of Heart Disease and Rheumatic Fever in School Children in Three Climatically Different California Communities. *Am. Heart J.* 29:178, 1945.
14. Quinn, R. W. The Incidence of Rheumatic Fever and Rheumatic Heart Disease in School Children in Dublin, Georgia, with Some Epidemiological and Sociological Observations. *Am. Heart J.* 32:234 (Aug.), 1946.
15. Snedecor, G. S. *Statistical Methods.* Iowa State College Press, Ames, Iowa, 1946.
16. Glover, J. A. Milroy Lectures on the Incidence of Rheumatic Disease, I. "Incidence of Rheumatism." *Lancet* I: 499, 1930.
17. *Sixteenth Census of the United States 1940.* Population, Vol. II, Characteristics of the Population. Part 1. U. S. Dept. of Commerce, Bureau of Census.
18. Housing Analytical Maps (Hartford, Conn., Bridgeport, Conn., and Waterbury, Conn.—separate maps for each city). Block statistics—Prepared under the supervision of Dr. Leon E. Truesdell, Chief Statistician for Population, Bureau of the Census. Prepared and duplicated by New York City W.P.A. War Services.

"The challenge of today's crisis is the most commanding which Western society has ever faced. We have always known that knowledge was a perilous possession, because it could equally well work in the wrong direction; but the knowledge that has been placed in the hands of this age is so supremely capable of misuse—and misuse could so easily reduce the hopes and monuments of men to drifting dust—that the impact of the challenge finds us confused, uncertain and fearful.

"Like all frightened people everywhere and in all ages, our first reaction is physical force, and our instinctive faith is given to military power. Let us grant at once that in this unprecedented crisis a measure of physical force is essential. We do not live in a utopia, and it would be suicidal to act as if we did. Equally suicidal, however, is the assumption that the crisis can be met solely on the level of force, or that mechanisms, power and dollars constitute the essential elements of the solution."—Raymond B. Fosdick, *Rockefeller Foundation—A Review for 1947.*

The Rheumatic Fever Community Program

Its Value in the Epidemiological Study of Rheumatic Fever

SUMMARY OF THE SYMPOSIUM * PREPARED BY THE MODERATOR

DAVID D. RUTSTEIN, M.D., F.A.P.H.A.

AT THE Annual Meeting of the American Public Health Association in Cleveland, Ohio, November 13, 1946, a symposium on the organization of community rheumatic fever programs was conducted.† At that time it was pointed out that such a program would bring many benefits to a community. These include: (1) facilities for the precise diagnosis of rheumatic fever, which are now sadly lacking throughout the country, the disease being as frequently overdiagnosed as it is underdiagnosed [1]; (2) facilities for the proper care of patients suffering from rheumatic fever, including hospital beds for the care of acute patients, providing isolation from other patients suffering from hemolytic streptococcal infections, and convalescent care for those with subacute disease; (3) sulfonamide programs for the prevention of recurrent attacks of acute rheumatic fever; (4) a program for the prevention of subacute bacterial endocarditis following tooth extraction or operation on the upper respiratory tract; (5) vocational training of young patients suffering from rheumatic heart disease so that such patients may become useful citizens instead of public charges.

It was also pointed out at that time that these objectives could be attained by careful integration of community facilities, implemented by a rheumatic registry.[2] The practical problems to be faced in the organization of such programs were stressed, but it was indicated that these are not insurmountable.

The present (Atlantic City) session was organized to carry forward the concept of the community rheumatic fever program and to indicate its value as an epidemiological tool. This session correlated the interests of representatives of the Sections on Epidemiology, Maternal and Child Health, School Health and Vital Statistics, and was planned in coöperation with the American Council on Rheumatic Fever of the American Heart Association.

Precise epidemiological data concerning rheumatic fever are difficult to obtain, for reasons which will become evi-

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* The titles of the papers presented before the American Public Health Association at the Seventy-fifth Annual Meeting are as follows:

The Rheumatic Fever Community Program — Charles A. R. Connor, M.D.
Public Health Nursing in Rheumatic Fever — Mary E. Parker, R.N.
Medical Social Follow-Up — Florence I. Mosher
Rheumatic Fever and the School Child — George M. Wheatley, M.D.
Principles of the Epidemiology of Chronic Disease — Alexander D. Langmuir, M.D.

† Participants in this symposium were Marjorie T. Bellows, A. L. van Horn, M.D., Ruth E. Lynch, and David D. Rutstein, M.D.

dent as this symposium unfolds. The first essential of an epidemiological study is the identification of individuals suffering from the disease. Dr. Charles A. R. Connor indicated that precise diagnosis of acute rheumatic fever is extremely difficult because heart murmurs of no significance occur in normal people and many of those suffering from the disease have an atypical course. Moreover, the exact etiology of the disease is unknown and there is no specific diagnostic test. Diagnosis is usually dependent on the physician's impression of a group of nonspecific symptoms and signs. The best available criteria for diagnosis are the empirical ones established by T. Duckett Jones.[3] He distinguished between major and minor symptoms and indicated that a diagnosis of acute rheumatic fever may be made with relative certainty in the presence of two major findings or one major and two or more minor symptoms.

Precise diagnosis is difficult to obtain on a community-wide basis without the diagnostic facilities available in a community program. The existence of a community program will, therefore, make it possible for the epidemiologist to obtain reliable information concerning the existence of disease in the community and will make it possible for him to secure that information needed for the study of rheumatic fever.

Another essential for epidemiologic study, provided by the community program, is adequate follow-up of those suffering from this disease or those in whom a definite diagnosis has not been established. In a community where a rheumatic registry has been established, this can be provided by the coöperative efforts of the public health nurse and the medical-social worker.

Too often nurses and medical-social workers have concerned themselves with the question of invasion of the rights of one profession by the other, rather than the coöperative activity of the two professions. This is particularly important in the community rheumatic fever program, because in certain parts of the United States services are provided by medical-social workers which in other areas are provided by public health nurses. In particular, urban services are more likely to be provided by medical-social workers and rural services by public health nurses.

In the New York State program, it was possible to establish a coöperative working relationship between the public health nurse and the medical-social worker. This experience may well provide the basis for coöperative working relationships elsewhere. The plan was worked out in a relatively rural area where a generalized public health nurse system existed and where the role of the medical-social worker was that of consultant, adviser, and educator. Those particularly interested in this problem may read the details of this relationship in the summaries of the papers presented by Mary E. Parker and Florence I. Mosher in Appendix I.

Dr. George M. Wheatley indicated that the school medical service is important in the community program because rheumatic fever causes more deaths than any other disease in children of school age, first attacks usually occurring in this age group, and because it is the most useful screening agency in case finding.

To aid school health authorities in developing a more rational approach in the control of disease, it was proposed that: (1) the school medical examination be improved to aid in more accurate recognition and supervision of rheumatic children; (2) more emphasis be placed on referral by teachers and nurses of pupils believed to be below-par for medical review; (3) less emphasis be placed on restricting the physical activity of rheumatic children, and more attention given to daily observations of pupils for signs or conditions sug-

gestive of rheumatic disease; (4) there be available to school health services and the practitioners diagnostic and consultation services; (5) these services be developed in coöperation with, and by utilization of, existing medical and public health resources in the community.

Dr. Alexander D. Langmuir outlined the principles of the epidemiology of chronic disease as they apply to rheumatic fever. He indicated that the principles of epidemiology were first established through studies of recognized clinical cases of acute epidemic disease and that such principles have been applied to chronic diseases, particularly tuberculosis. He stressed the importance of not disregarding the application of such general principles to the solution of new problems. For example, problems which have been satisfactorily solved in tuberculosis programs have been approached, as far as rheumatic fever is concerned, as if they were entirely new problems. This lack of awareness has handicapped the development of rheumatic fever programs throughout this country.

Dr. Langmuir further discussed the application of the epidemiologic method as exemplified by the studies of John Snow on cholera, and indicated that Dr. Snow, a clinical investigator, had the wisdom to support his clinical observations by the use of epidemiologic techniques which firmly established the principles which govern the transmission of this infectious disease. The added difficulties in the study of chronic disease were then pointed out, with particular reference to: (1) the need for long-time follow-up; (2) the difficulty in the determination of incidence rates; (3) the use of discovery rates, prevalence ratios, person-years analyses and modified life table procedures; and (4) the problem of the index case. In spite of difficulties in diagnosis and evaluation of vital statistics, it was indicated that a pattern has been slowly emerging which will provide the basis for the explanation of the epidemiology of this disease, and that this has been furthered by the study of epidemics of rheumatic fever in closed population groups. It was emphasized that there was also a need for intensive studies in communities where a rheumatic register (see Appendix II) provides an accurate count and a continuity of observation on all cases, occurring and recurring through the years, in populations that are well defined and measurable.

In the discussion which followed, Miss Jean Downes emphasized the need for the qualitative as well as the quantitative study of chronic disease; Dr. Thomas D. Dublin pointed out that while the community rheumatic fever program would make epidemiologic studies possible, good epidemiologic studies are prerequisite for the development of sound community programs; Dr. Richard Hodges indicated the need for control studies in broad, unselected population groups; and Dr. Samuel M. Wichik emphasized the value of a school health program in providing continuous medical observation of those afflicted with rheumatic fever or rheumatic heart disease.

APPENDIX I

Public Health Nursing in Rheumatic Fever

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Public health nurses have always given care to patients with rheumatic fever, but adequate and complete service is very difficult, and well nigh impossible unless essential information such as a definite diagnosis and specific recommendation is readily available to them.

In 1942, a diagnostic and consultation cardiac clinic for patients under 21 years of age was established in a rural area in Upstate New York. In connection with this, a follow-up system to insure adequate nursing service was developed.

The cardiac clinic serves three counties, all of which have well established generalized public health nursing services and school nursing services. The generalized public health nursing service in each county is responsible for nursing follow-up. In addition to assisting at the diagnostic and consultation clinic, the public health nurses are responsible for working with the school nurses, social agencies and others in the community concerned with the care of the cardiac child. In fact, they act as liaison between the local physician, the school nurses, the social agencies, the families, and the cardiac clinic.

In preparation for taking on the follow-up of these patients, all public health nurses in the area, including the school nurses, were given a series of six lectures on rheumatic fever. At that time, a convalescent cardiac unit was conducted in one of the state-owned hospitals, and the nurses were given an opportunity to observe the management of rheumatic fever patients, including medical and nursing care, education, occupational therapy, recreation and social service. Opportunity for further learning is furnished at the cardiac clinic.

At the clinic, the supervising public health nurse in the county in in which the clinic is located is responsible for the management of the clinic and for the supervision of the public health nurses, the secretary, and the volunteers. An attempt is made to rotate the public health nurses assisting at clinic so that all will have an opportunity to learn more about the management of the child with rheumatic fever and rheumatic heart disease. The school nurses are encouraged to attend clinic and frequently do so when children known to them are being examined.

All patients must be referred by a local physician. If a public health nurse finds a patient with symptoms suspicious of rheumatic fever, she must refer the patient to his own physician. Only if he requests consultation can the nurse make an appointment at clinic.

When a patient is seen at clinic, a report of the findings and recommendations is sent to the referring physician. The referring physician is advised that the local public health nurse will communicate with him and will give him any assistance she can in the follow-up of the patient. If a definite diagnosis of rheumatic fever is made, the referring physician may request the clinic to provide further consultation in regard to treatment. This is done with the understanding that he will provide interim care. In almost all instances where a definite diagnosis is made, this service is requested and the nurse reports to the clinic physician as well as to the referring physician.

Home visits are made by the public health nurse after she has conferred with the family physician.

The public health nurse is responsible for helping the family to establish a desirable environment for the child who has rheumatic disease. The relationship between streptococcal infections and rheumatic fever must be kept in mind constantly in helping to make any plan for care. What the nurse teaches the family and what help she gives will depend upon whether the child has active rheumatic fever, is convalescing from an attack of rheumatic fever, or has completely recovered to the extent that he can live a normal life. In any particular case, the assistance the nurse gives will depend largely upon the specific recommendations made by the physician.

A report of the items recommended by the clinic physician may help to give some idea of the nurses' job in follow-up. The records of 80 patients with a definite diagnosis of rheumatic disease were examined. Records

of patients with questionable heart disease and congenital heart disease were not included (although the public health nurses gave service to children with congenital heart disease).

In 23 different recommendations occurring a total of 169 times on 80 patients, 28 per cent were concerned with activity of the ambulatory patient; 26 per cent with diet; 10 per cent with bed rest (one-half for active rheumatic fever); 5 per cent with dental care; 4 per cent with avoidance of U.R.I.; 9 per cent with investigation of other conditions; 2 per cent with psychiatric examination; 2 per cent with foster home and convalescent care; 2 per cent with home teaching and school transportation; and 12 per cent miscellaneous items.

A great deal of emphasis is placed upon the more dramatic aspects of care—the care needed during an acute attack of rheumatic fever. Yet, in this particular group of children, it appears that the bulk of the public health nurse's work is helping to provide service which is a part of good child hygiene. This is the kind of care that these patients need most of the time. Only occasionally are special care and special service needed. It is estimated that in this group only about 5 per cent of the children need special care, such as hospital or convalescent care, at any one time. The importance of providing adequate services needed during an acute episode of the disease cannot be over-emphasized, but I think we need to give more thought to improving the nursing services these children need while they are well.

In addition to carrying out specific recommendations on individual patients, the public health nurses have the same functions as they do in any other public health program—namely, case finding, assistance in obtaining medical care, providing nursing care and assistance to the family in obtaining any other services necessary to the rehabilitation of the patient. The public health nurse is not expected to be able to provide all services—in fact, she is not equipped to—but she is expected to be aware of the need for them and to help the family obtain them from the appropriate community agency by coöperative activity with the medical-social worker. These services include education, vocational guidance, rehabilitation and social services—all of which are provided by agencies other than the health department.

In connection with social services, a plan was developed to provide consultation to the public health nurses by a medical-social worker employed by the State Department of Health. When a public health nurse found a social problem, she referred it to the consultant medical-social worker for advice. Sometimes a conference was all that was indicated; at other times, it was necessary to arrange a meeting with the local social agency to outline a plan for the family; and occasionally it was necessary for the medical-social worker to visit the home with the public health nurse before a decision could be reached. This plan is recorded in the past tense because for the last two years consultation service has not been available. During the time that it was, 9 per cent of the cases carried by the public health nurses were cases that presented serious social problems on which the nurses needed assistance. This figure does not include situations in which the problem was merely one of securing help from an agency to supplement an inadequate diet or to provide funds for hospital or convalescent care. It also fails to indicate the assistance given to nurses by the medical-social worker in staff education programs and in staff conferences. So popular was this service that the scope of consultation expanded to include problems of a social nature encountered by the public health nurses in all of the patients under their supervision regardless of the diagnosis.

If follow-up is to work effectively, it is necessary to keep everyone informed about what is happening to the patient at all times. A system of reporting has been set up whereby the clinic physician has a complete report of the patient's progress between clinic visits, and the nurse is kept informed of the physical findings and the recommendations. Only one record form is used for this and is shuttled back and forth between the clinic and the public health nurse. The referring physician receives a report each time a patient under his care is examined at clinic and he is also given a report of the visits by the public health nurse.

Any follow-up system, if it is to result in adequate service to the patient, must provide for a method of coördinating the work of the agencies giving services needed by the rheumatic fever patient. Included in this are hospitals, convalescent homes, clinics, private physicians, public health agencies, social agencies, educational and rehabilitation services.

Unless there be a coördinated plan for care, the public health nurses will have difficulty in carrying out their responsibilities in a rheumatic fever program.

Medical Social Follow-Up

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With the broadening of public health programs and the development of medical care programs on national, state, and local levels, the scope of medical-social service has widened. The fundamental responsibility of meeting social needs remains the same, but the application of principles and techniques is related to medical care for a large number of patients. In many of these programs, a medical-social worker functions as a consultant and does not duplicate the services of social workers in other social agencies, of hospital social workers or public health nurses.[4] She assists the administrative personnel in program planning to insure consideration of social factors pertinent to the provision of medical care; gives consultation services to the staff on individual and group problems that have social implications; promotes the development of coöperative working relationships with community agencies in the fields of welfare, education, rehabilitation, recreation, hospital social service and convalescent care, so that their services may be utilized to the utmost in meeting needs related to illness, medical care, and positive health for the community.

There are frequent references in medical literature to the similarity of the problems and the management of tuberculosis and rheumatic fever. Community organization programs for tuberculosis have been suggested as guides for the development of similar programs for rheumatic fever.[5] About one year ago, the U. S. Public Health Service sent out a publication entitled "Medical Social Service in Tuberculosis Control"[6] which discusses the functions of the medical-social worker in that program. There is a striking similarity between the described activities in that pamphlet and the pattern of medical-social service developed a few years ago as a part of the program of the Cardiac Bureau in the New York State Department of Health. A cardiac service for the care of children with rheumatic fever was established at the New York State Reconstruction Home and has been described in the paper given by Miss Parker. The basic philosophy of medical-social service programs can be applied to a rheumatic fever community program, as outlined by David D. Rutstein[7] in a paper read at a symposium on "Rheumatic Fever," and by the Public Affairs Pamphlet[8] on rheumatic fever.

The medical-social worker functioned as a consultant and gave direct case work services when referrals were made by the public health nurse or doctor and there were no community resources available to give such services. She was responsible for compiling data about the community agencies which provide social services for that area. In instances of duplication of agency programs, she assisted in promoting the realignment of their services. The medical-social consultant helped with the development of coöperative working agreements with agencies. Through her liaison activities, she strengthened the integration of agency services toward the maintenance of a well rounded program. She was able to indicate need of new resources as she became aware of unmet community needs as well as to help improve existing facilities.

In the diagnostic clinic, the medical-social worker acted as a consultant to other staff members. She assumed direct case work responsibility when requested by physician and public health nurse and when facilities were not available in the community. One of her major functions was the uncovering, evaluating, and assisting in the adjustment of emotional fears, economic stresses, and social problems that prevent acceptance of diagnosis and recommended treatment. Whenever several members of the medical team were concerned with a complicated social situation on the same case, there was a conference and agreement upon the responsibility each would carry. When a health problem was predominant, the public health nurse assumed the leadership. When there were both health and social factors, the case was carried by the public health nurse with consultation from the medical-social worker. If the social factors were predominant, case work services were requested from the proper community agency. Joint conferences of public health nurse, medical-social worker, and agency representative insured good planning and services for the patient and his family.

In the rheumatic fever community program, the medical-social worker assisted in the development of standards to be used for deter-

mination of the ability of parents to participate in financial arrangements for medical care which would permit the maintenance of a reasonable standard of living and help retain a stable family unit. Interpretation of the illness and the medical recommendations to welfare departments helped them to recognize the need for providing medical care for rheumatic fever patients without penalizing the family who can manage to meet their current expenses. Because of the chronicity of the disease and with long-time bed rest the only effective treatment, it was imperative that the family maintain good living conditions and emotional balance.

Since the acute rheumatic fever patient may be hospitalized, there was close coöperation with the hospital medical-social worker. In order to have good continuity of care, there was interchange of medical and social data between agencies providing services for the patient and his family. While he was in the hospital, unfavorable home conditions were adjusted if possible.

When the rheumatic fever patient was ready to leave the hospital, the physician, public health nursing consultant, medical-social consultant, and hospital personnel worked out a plan of convalescent care that was determined by the total situation. If the patient's home were unsatisfactory due to substandard housing or emotional factors, his placement in a cardiac unit or a foster home was decided on the basis of his needs. Educational, recreational, and vocational services were also important at this time.

When the patient returned home, the public health nurse gave follow-up service with the medical-social consultant giving consultation service when needed. It was necessary, from time to time, for the nurse and medical-social worker to have joint conferences with welfare or other agencies for better understanding of the total family situation and to reach an agreement regarding services the respective agencies were to provide for the patient and his family with emphasis on alleviation of factors that cause recurrence of the disease.

Although the opportunity was not provided in this program, a medical-social worker can function effectively in social research relating to community health and medical care programs. In a rheumatic fever community program, she could have ample opportunity to collect data regarding the effects of inadequate housing, income, diet, and psychologic factors. Further data could be obtained regarding the greater number of recurrences occurring when a child convalesces in his own home. Studies might disprove this statement if all needed services were available and a well rounded program could be provided for the patient and his family while he remained at home.

APPENDIX II

The Registry in the Community Rheumatic Fever Program

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The primary function of a register is to implement with specific mechanical procedures the program of service to rheumatic patients. There are, however, certain prerequisites of a program which are particularly essential to the development of a register. First, there must be agreement by the medical profession and all agencies to centralize responsibility for integration of the program. This discussion is based on the assumption that there is a central agency from which procedures governing the entire program can emanate and where the register which controls such procedures can be located. A second essential condition is that there be accepted standards and criteria for adequate service. Such criteria have been set up for cardiac clinics, but there should be similar guides for appraising the quality and adequacy of all services and facilities. There should also be minimum standards for the frequency and kind of care and follow-up required by each type of patient to be included in the program.

The obvious first procedural step in instituting a program is to survey all community resources in order to appraise existing facilities as to volume and quality and to determine which groups of the population are receiving care and the effectiveness with which they are served. Such an appraisal of resources makes it possible to discover where existing services are inadequate and where overlapping and

duplication occur. On the basis of this information, it will be possible to outline a program which will utilize fully both existing facilities and whatever supplemental service can be made available.

The next step in organizing a program is to set up continuing checks to see that specific objectives are being carried out. This means, first, that there be available a perpetual inventory of facilities and, second, that there be automatic checks to see that every patient is getting the service intended. A resource file is suggested as a possible mechanism for maintaining current information regarding facilities and services. A case registry is the device which has been found in other chronic disease programs to be essential for case management. Both may originate in a community survey and both can be maintained by a system of routine reporting and regular follow-up.

RESOURCE FILE

The resource file is essentially a device for showing the volume of facilities available to carry out the objectives of the program. In smaller communities where treatment, care, and follow-up agencies are few in number, it might not assume quite as much formality as is implied in its name, but, in all communities, there should be an organized method for obtaining answers to very important questions which relate to program planning and case referral. Certain facts which should be easily obtainable from the resource file can be listed as follows:

1. The capacity of existing facilities and their quality as measured by accepted standards.

2. The extent to which these facilities are being utilized (for example, the number of patients being served annually by each agency). Ideally, the central integrating agency might attempt to keep current information as to the numbers and locations of vacancies for such facilities as beds for acute care. It might prove difficult, however, in large metropolitan areas to keep such information current.

3. The economic selectivity of existing facilities—in other words, the resource file should supply data showing how much service is available to patients who are able to pay for it and how much to patients regardless of their financial status.

Such an analysis of resources will be derived, in the first place, from a survey. It can be maintained by a combination of periodic reports to the integrating agency and follow-up procedures in the field.

The initial survey will require careful planning to see that all agencies which are concerned in any way with rheumatic patients are included. As in all surveys, there must be prepared forms specifying exactly what information is desired. Such forms should be sent out at approximately the same time and followed up to make certain that the survey is complete. Maintenance of the file requires reporting forms, regulations for reporting, and follow-up. Special summary sheets or tabulation forms should be devised so that information may be tabulated regularly and summaries compiled whenever they are required. This describes, in general terms, what should be done, but field experimentation should result in detailed forms and directions or manuals of procedure for setting up and maintaining a resource file.

CASE REGISTER

The case register is a file of summary cards —one for each individual who requires service under the rheumatic fever program. It is a cross-index, on a case basis, of all services in the resource file, in that it shows for every patient, the persons or agencies who are giving service. It also shows for each patient his current diagnostic, therapeutic, and functional classification; where he is located; his occupational or school status; and who is responsible for his care. These are minimum requirements and, depending on the program, other items may also be required.

The functions which a case register can serve are as follows:

1. It is an index of all known cases. Newly reported cases can be checked in this file as a first step in verification of diagnoses and to find out whether or not they have had previous treatment and, if so, where and from whom.

2. It makes available in one place, to any agency concerned, a means of locating all existing detailed information on a specific case.

3. It can show where duplications of service are occurring and eliminate overlapping of service.

4. It provides, at a focal point, enough information for an individual case to reveal deficiencies in care or supervision.

5. It can serve as a mechanical device for directing follow-up activities. Cards can be flagged to show automatically which cases need some sort of follow-up and by whom.

6. It will provide statistical data which will aid in developing and planning the overall program and help in evaluating the effectiveness of the program.

As to information to be included on the

individual register card and how it may be obtained, this depends, to a large extent, upon the program itself. For purposes of this discussion, it will be assumed (1) that the program includes some system of case reporting into the register which will provide a source of information as to the location of new cases; (2) that there are criteria established for acceptable diagnoses and provision for verification of those that are not acceptable; (3) that every case will be followed up immediately after first report by field personnel; (4) that there is some system of interim reporting on admission to and discharge from service by all agencies concerned in order to keep case information current; (5) that there is routine follow-up of cases who have not been reported on for certain periods of time as an additional procedure to maintain currency of information. Indeed, unless these five conditions are met, the wisdom of setting up a community register might be seriously questioned.

The initial report will supply basic identifying data such as name of patient, name of parents or guardian, address, age, sex, color, marital status, and present location, together with the diagnosis at time of first report, the reporting agency, and date of report. This is the kind of information ordinarily included on forms for reportable diseases and represents about the maximum that can be required or relied upon from an initial report.

Previous history of rheumatic fever (with dates), occupational or school status, and agencies at present giving care should be obtained through some form of follow-up such as a nursing home visit or letter to the physician.

Follow-up data showing, with dates, most recent diagnosis, present location of patient, agency at present responsible for medical supervision, other agencies giving advice, and current occupational and school status, should be obtained from interim reports and can be recorded on the register card in table form chronologically as reports come in. In the absence of such interim reports, provision should be made for some kind of periodic check with the agency responsible for supervision to keep information on each case reasonably current.

The register may be set up initially either by surveying all agencies who may have responsibility for patients and abstracting case records, or by building it gradually from routine case reports. Since in the latter case it is difficult to know when or if the register is complete unless a check survey is made, it seems as if a case survey made at the same time as the resources survey is preferable. Whenever a case survey is done, there should be provision for follow-up of all cases where complete information is not obtained.

As to maintenance of the register, systematic reporting will do much to keep information current and will cut to a minimum the amount of follow-up required. The following types of reports are suggested as basic:

1. Reporting of all newly diagnosed cases by physicians, clinics, and hospitals.
2. Reports of changes in diagnosis by physicians, clinics, and hospitals.
3. Admission and discharge reports from all institutions and agencies.
4. Report of all deaths from rheumatic fever and from heart disease within a certain age group by the vital statistics agency.
5. Reports from school health services of children suspected of having rheumatic fever or rheumatic heart disease and those admitted to special classes. In addition, there should be reports of children changed from special to regular classes.
6. Reports from follow-up agencies, such as medical-social workers and nurses.

For best control of the program all reports of new cases should be reviewed by a physician in order to classify the diagnosis, and to make whatever initial contact with reporting physicians may be necessary. At certain intervals, every case summary should be reviewed by a physician to determine whether or not routine procedures are operating effectively. A decision should be made after every additional report on a case as to when it next requires follow-up and by whom, and, at this time, the card should be marked with a signal in some way to show when the next follow-up report is due and from whom it is due. Procedures should be established for notifying, automatically, the agencies concerned that some action is required. Forms to specify what new information is desired and what action is to be taken can be developed. There should be, also, regulations as to what type of information is to be forwarded to other agencies routinely, and report forms to facilitate transfer of information from the registry to other agencies should be drawn up.

It might be wise, at this point, to emphasize that definite limiting conditions should be placed on admission to and discharge from the register in order to prevent it from becoming unwieldy and inefficient. There must be established policies or rules specifying what cases are to be included in the current register and when they are to be discharged as non-current and for what reasons. From a realistic standpoint, the current register can

include only those cases who are being followed up at regular specified intervals, and about whom information is being kept current. The program itself and the amount of service that can be given will determine which cases are followed up and are, therefore, to be included in the current file and when they are to be discharged from follow-up and from the active register. Mere faith that patients who ideally should be followed up will somehow be seen or heard from, and trust that dead wood will eventually drift out of the register, are certain means of acquiring a large unmanageable file of meaningless records. There is no magic by which the register can be more inclusive than the follow-up program itself.

There are a number of mechanical systems on the market that are easily adapted to registers of the sort described. Visible files are certainly the most efficient where there are less than 2,000 cases, since the visible edge can be used for indexing, signalling, and for coding statistical items which will need to be counted frequently. For larger files, punch card systems can be adapted to do all that visible files will do on a smaller scale.

By way of summary, it should be emphasized that the filing and reporting systems outlined have not been field tested, nor can they be considered final recommendations in any sense. They are not, however, in any way unique to rheumatic fever programs. Any chronic disease program requires very similar mechanisms and excellent ones have been worked out, notably by persons working in the tuberculosis field.[9, 10] It might be wise to remember that no mere mechanics will be successful in developing a sense of community responsibility for cases of rheumatic fever and rheumatic heart disease, nor will they shape an effective rheumatic fever program. They can only provide a mechanical basis for, and implement a program which has been accepted by professional and lay members of the community and one which has clearly defined objectives, specifically stated standards for care and follow-up, and adequate personnel to see that these standards are met.

REFERENCES

1. Rutstein, David D., and Parker, Mary E. Unpublished observations.
2. Rutstein, David D. Need for a Public Health Program in Rheumatic Fever and Rheumatic Heart Disease. *A.J.P.H.*, 36:461–467 (May), 1946.
3. Jones, T. Duckett. Diagnosis of Rheumatic Fever. *J.A.M.A.*, 126:481–484 (Oct. 21), 1944.
4. Hall, Beatrice. The Role of Medical Social Service in the Public Health Program. *The Child*, 9:127–130 (Feb.), 1945.
5. Armstrong, D. B., and Wheatley, G. M. Community Organization for the Control of Rheumatic Fever. *New York State J. Med.*, 45:169–173 (Jan. 15), 1945.
6. Federal Security Agency, Washington, D. C. Medical Social Service in Tuberculosis Control. U. S. Public Health Service, *Misc. Pub. No. 37*, 1946.
7. Rutstein, David D. The Role of the Cardiac Clinic in the Rheumatic Fever Program. *J.A.M.A.*, 126:484–486 (Oct. 21), 1944.
8. Yahraes, H. Rheumatic Fever, Childhood's Greatest Enemy. *Public Affairs Pamphlet No. 126.*
9. Mikol, Edward X. *A Manual of Methods for Organizing and Maintaining a Central Tuberculosis Case Register.* National Tuberculosis Association, New York, 1943.
10. Federal Security Agency, Washington, D. C. *State Central Case Records and Local Case Registers for Tuberculosis.* U. S. Public Health Service, Tuberculosis Control Division, 1947.

"In spite of all evidence to the contrary the things that divide the world are trivial as compared with the things that unite it. The mutualities of human beings everywhere far exceed their divergencies."—Raymond B. Fosdick, *Rockefeller Foundation—A Review for 1947.*

A Medical-Social Worker's Approach to the Problem of Poliomyelitis*

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A SOCIAL component exists in every illness in so far as the illness disturbs the usual normal activities of the patient. The extent of this interference may range all the way from a minor inconvenience to a major breakdown in an entire way of life. Illness thus influences the patient's environment, his relationships, and his feelings of adequacy as a human being. People differ from each other constitutionally and psychologically. Diseases affect human organisms variously. The development, progress, and final outcome of many illnesses are influenced by factors outside the disease process itself. Reactions to a given illness in different individuals will be determined by their diverse constitutions and personality structures, and by their economic and social circumstances. The interplay of all these elements produces the individual illness situation for each person. Therefore, the care of the whole patient, rather than treatment of the disease only, becomes the aim of all the professional workers involved.

These principles are very well known, but unfortunately in times of crisis or pressure their application in practice is often unnecessarily sacrificed. All the professional workers are members of a team of which the physician is the chief. While each worker has a specific function based on a particular skill for which he has been trained, all have some degree of social responsibility. The medical-social worker, because of her particular training and skill, has the major social function. It is generally recognized that this worker helps individual patients deal with the social and environmental elements in the health problem, and assists him to make the most effective use of medical care and related health services. She is also concerned with administrative policy as it affects the patient. Too often hospitals and other medical agencies unintentionally create problems for patients through failure to consider social factors in program planning and policy making. In organizations where the medical-social worker has been part of the team while administrative policies were being created, many of these difficulties have been anticipated and avoided.

Poliomyelitis presents special problems arising from its natural history, and from certain unsolved clinical aspects. People have a unique dread of this disease. Its cause is unknown. Its onset is sudden and dramatic; the outcome unpredictable. Its effects are often swift and irreversible. The greatly publicized controversies about methods of treatment have often aroused doubts and loss of confidence in the particular treatment prescribed. During epidemics, panic is widespread. Families of patients are naturally anxious. Superstitious fear on the part of the general public intensifies prob-

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lems of caring for patients and their families. These emotional and environmental factors are inseparable from the problems of care and treatment. If adequate social consideration is unavailable, eventually these severe emotional experiences may be expressed in various ways to the detriment of the patient. The separation of patient and family during the isolation period, without reasonably adequate information about the patient's condition, causes parents to become agitated and even hysterical. They may insist on removing the patient from the hospital against advice during the acute phase. Others may wish to postpone indefinitely the patient's discharge. This may be due to rejection of an unwanted child, or to inability to face the new difficult situation, or to fear that the patient's care will be overburdensome.

The following illustration[1] was reported by a U. S. Children's Bureau consultant on visit to a state during an epidemic:

> The worst epidemic of poliomyelitis in years had hit the state that August. From farms and little towns parents brought their sick children in jalopies, trucks, and wagons along the hot, dusty roads to the city for treatment. The hospital wards were overflowing, and physicians, nurses, and attendants worked night and day to care for the polio victims. Rooming houses and auto courts, afraid of the disease, refused to accept the parents, many of whom camped in their cars and waited day after day for word of their children. Families were frantic. Some parents secured ladders so they could climb up to the hospital windows and look in. In one family, the mother and three children had been stricken—the grandmother stayed outside the isolation hospital keeping vigil. In another family five members had been stricken. The weary and anxious father kept his post outside the hospital day and night.
>
> Doctors were too busy to talk to anxious parents, regarded as a nuisance by the overworked hospital staff. All non-polio patients, that could be moved, were to be sent home, but no response had been received from several parents. . . . The medical-social worker assisted in the discharge of these patients, bearing in mind that no child should be discharged to unsatisfactory home conditions which would hinder his recovery. . . .
>
> Problems of family relationships were recognized as the main concern of the medical-social worker, who talked with each parent to ease his anxiety and to learn about his ability to care for the child at home. Some parents would cease their futile waiting and return home if assured of regular reports about the child's condition; other parents who needed to remain close to their children were helped to secure proper living accommodations through the State Welfare Department, Salvation Army, and service clubs.
>
> . . . Community agencies, when given leadership, rallied to give the parents shelter. Many parents returned home. One father confided that he had lost a leg in a childhood accident and feared that his son, of whom he had been so proud, would be a hopeless cripple. He returned gratefully to his duties on the farm when assured that the child's involvement was slight and that he would be kept informed of the boy's condition.
>
> A father, whose wife had a serious heart condition, had been frantic because the family could not give his little girl the attention recommended when she would return home. His relief was tremendous when told that convalescent care in a foster home would be arranged. . . .

These circumstances in one undeveloped rural community are familiar to all workers outside of large metropolitan areas. However, they are not unusual even in cities. Experiences of the same type, though of different quality, in a highly organized teaching hospital were reported in published accounts[2] of the 1943 Connecticut epidemic.

Social services for patients and their families are needed at the time of an epidemic. One of the problems frequently is to assure plans for beds required for the acutely sick polio patients. Major problems for social service are the anxiety of parents, their readiness to incur expenses impossible for them to meet in order to get care for their child; fear in their communities and the refusal to have any contact

with the families in which poliomyelitis has developed; lack of attention to the emotional needs of children receiving care in a hospital ward where personnel are greatly overworked; failure to establish a means of direct communication between doctors and parents; adequacy of the home for care, if the child is not sent to a hospital; and also the development of undue strains on family relationships.

Community plans for children with infantile paralysis should be well developed in advance so that responsibility for standards and adequacy of *all* phases of care is established and carried by a responsible agency, preferably a health department or other official agency working coöperatively with the health department. This is advised because various parts of service are frequently provided by different agencies. As a consequence gaps or overlapping services result without ultimate responsibility carried by any one agency. The coördination and integration of all the medical and auxiliary community social services are urgently needed to insure best care for the patient and the most advantageous and economical use of resources.

Viewing the country as a whole, there exists an infinite variety of community organization and medical settings, with equal diversity in numbers and types of professional workers. To enumerate a few, among them are clinics of public programs, both permanent and itinerant, public hospitals on state, county, and municipal levels; voluntary hospitals, some of them affiliated with medical schools, proprietary hospitals, convalescent, nursing, and chronic homes. Inasmuch as all the necessary personnel are not present as a rule in any of these institutions, one can only suggest principles to guide, rather than recommend specifically the relationship of the medical-social worker and her professional coworkers. The medical-social worker may be in a hospital giving direct service to patients and families; or a consultant to other members of the medical team or to non-medical community agencies. In either setting, knowledge of the social aspects, shared by the medical-social worker with her professional coworkers, increases their capacity to carry out their own responsibilities. The medical-social worker in turn has much to learn from her coworkers. In fact, the insight she gains from a knowledge of the others' activities often gives her greater understanding for her own work in a given situation.

When the acute phase of polio passes into the convalescent stage, many different problems arise for the patients left with paralysis. The need for continuous care of many weeks, months, and often years is a challenge to patient and family. The normal place for a patient is in his own home. Adequacy of a home is determined by considerations of distance from treatment center, physical facilities, economic security, health, intelligence, and emotional attitudes of the family. The feelings of the parents toward the child and his sense of security may influence the duration and extent of his incapacity. Parents must have the willingness, intelligence, and freedom from other family and personal complications to coöperate in home treatment, persist in exercise, encourage the patient to activity, self-help when crippled, and adjust to cumbersome braces. The sight of a crippled child or adult often arouses strong negative feelings in relatives, as well as in other associates or strangers. Some crippled children are extremely sensitive to their appearance and its effect on others. We have all seen the patient who feels himself conspicuous and handicapped by a slight foot drop, while another patient with a completely flail leg may make a normal adjustment.

The community has the responsibility for providing substitute arrangements, when the home is unsuitable for the patient's care. Few if any communities seem to have enough of the proper kind of convalescent homes, particularly for the adolescent and young adult. Convalescent institutions or foster homes become for many patients their only real home for long periods of time. Therefore, these facilities should provide a friendly, warm psychological atmosphere, good physical care, opportunities for development through education and recreation. The serious weakening of some family ties can occur quite easily. Frequent visiting hours for relatives, in addition to correspondence, are necessary to keep alive the bond between them and the patient. Otherwise children feel they are not loved or wanted at home. Many institutions consider relatives' visits annoyances and interrupting to their routine. With more imagination in administrative planning, the needs of the patient in this respect can be safeguarded without undue sacrifice by the management of the institution.

For children in some communities care must be provided in foster homes through the help of child welfare agencies. The necessity to plan resources for the chronic patient with complete and permanent disability is too well known to require further elaboration here, but is of sufficient importance to warrant this brief comment.

During the convalescent period, patients and relatives are confronted by new anxieties. They need careful interpretation of what convalescence will involve, a description of the place to which patients are being sent, and some estimate of the duration of their stay. As one worker put it, otherwise some patients get very "queer" ideas. Some, severely crippled, think they will walk at the end of three months, and can return to their former work. Others, during long-time convalescence, feel isolated, and believe their relatives have rejected and abandoned them. Antagonism and severe emotional upheaval often result when unprepared patients learn the truth finally about their permanent crippling and disability. As soon as medically feasible, contact with the State Rehabilitation Agency may bring adolescent and adult patients new interests and hope of work and self-support for the future.

My personal observations in crippled children's clinics of several states left an enduring impression of the fortitude, physical strength, and patience needed by parents and patient alike. The sacrifice in normal personal social life for many parents is enormous. However, some lack the required intelligence and skill to deal with the discouragement and rebellion of the crippled child.

All professional personnel, doctors, nurses, physical therapists, teachers and occupational therapists sometimes encounter resistance in various degrees in their efforts to help patients. Most well trained personnel in all fields now have some instruction in the principles of human behavior, and something of the social aspects of illness. This insight is indeed helpful, but is not a substitute for the services available from a trained medical-social worker whose functions are social study, services to patient, and integrated work with all the other professional coworkers.

To get maximum benefit from treatment, the patient must be treated as a whole. The best way to achieve this is by regular frequent conferences of all involved in his care, each contributing from his special field and jointly deciding what role each will play. A procedure which has yielded excellent results in medical teaching hospitals and rural clinics alike is the joint group review and evaluation of a patient's problem. The results of such conferences become more than the sum of all

the individual contributions, for the give and take among the various workers often produces a new idea which no one person might have conceived by himself.

At times all of the specialized personnel participate simultaneously. At other times, the role of certain workers predominates and the others are less active. This requires a high degree of coöperation and understanding of each other's function, as well as clarity concerning each individual's own function. All have some social responsibility; none may relinquish a share of such responsibility, but to the medical-social worker should come the problems requiring social treatment, knowledge of community resources, not only of their existence, but of their specific services. As a social worker, she should know what can be expected of these resources; how to select the most appropriate from among those available, or how to improvise resources where no adequate professional agency exists.

The relationship between the medical-social worker and other professional coworkers may be exemplified, as follows: During certain stages of the illness, the physical therapist may be seeing the patient more frequently than any other member of the team. She has the opportunity to observe the patient's behavior which may be symptomatic of personal problems. She can best serve the patient and family, not by advising them how to deal with the apparent social problem but by sharing her observations with the medical-social worker, whose special training enables her to deal with the social difficulties. Discussion of the problem, when a patient first begins to lose interest in learning his exercises, may prevent the crisis in which he refuses to continue treatment altogether. Conversely, if a medical-social worker observes a patient exercising incorrectly, she has the responsibility to act. This would not be by instruction to the patient, but by relating her observations to the physical therapist within whose province this problem belongs. If all members of the team would correlate their services in this way, some difficulties in process of development might be overcome before they crystallize.

Each worker, by appropriate use of other services, frees himself for maximum service in his own specialized field. Such professional practice should result in the best care of the individual patient, and the most productive and economical use of the community's investment in its health and social agencies.

REFERENCES

1. From a personal communication from the Medical Social Unit, Health Division, Children's Bureau, Federal Security Agency, Aug., 1947.

2. Grant, Alice A. Medical Social Work in an Epidemic of Poliomyelitis, *J. Pediat.*, 24, 6: 691-723 (June), 1944. Copellman, Fay S. Follow-up of One Hundred Children with Poliomyelitis, *The Family*, Dec., 1944.

The Economic Status of Public Health Nurses, 1946-1947*

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THE average public health field nurse earned $2,290 a year while supervisors received $3,040 and directors of public health nursing services averaged $3,292 annually in 1946–1947. These salaries were paid for an average work week of 40 hours. These hours included some overtime, reported by substantial groups of nurses; in a majority of cases they received compensation, generally in the form of time off, for this work beyond regularly scheduled hours. About 3 out of 10 public health nurses were subject to call for some time in addition to their hours on duty.

Out of their salaries, public health nurses spent an average of $83 during 1946 on professional expenses. About 1 in 7 incurred professional expenditures of more than $200 annually.

Almost all public health nurses receive paid vacations and sick leave after a year's employment. Typically, vacations are for 2 to 4 weeks. Only a minority of public health nurses benefit from retirement pension plans, however, and only 1 in 6 is provided with hospitalization, medical care, or periodic physical examinations at the expense of the employing agency.

The major complaints of public health nurses were economic, including problems of provision for retirement and employment security, rates of pay, methods of awarding promotions and pay increases, and opportunities for promotion.

SALARIES, APRIL, 1947

Salaries in public health nursing are influenced by many factors. Some of these variations which can be easily observed are: position on staff, type of employing agency, part of country, and size of staff.

Generalized field nurses—The median salary among more than 7,000 field nurses was $2,290 per year. The range

* This article is based on two studies—the economic study of the nursing profession conducted by the Bureau of Labor Statistics of the United States Department of Labor early in 1947, and the 1947 Yearly Review of the National Organization for Public Health Nursing. The former study was conducted by a mail questionnaire filled out by about 1,350 public health nurses. These represent about half the public health nurses who received questionnaires and over 6 per cent of all 21,000 nurses active in this field in the United States. Replies were received from every state and from nurses employed in both governmental and non-governmental agencies.

Almost 650 public health nursing agencies returned Yearly Review schedules to the N.O.P.H.N.; 1,200 schedules were mailed. The Yearly Review contains sets of questions about which N.O.P.H.N. needs answers, salary data being one of the most important. The columns for salary data are arranged so that information is available by position on staff, by annual basic salary, and by cost-of-living adjustments. The salary figures used in these paragraphs include cost-of-living adjustments. Data are given for the following kinds of agencies: public health nursing services in 36 state health departments; 112 county health departments; 87 municipal health departments; 122 boards of education; 255 nonofficial agencies; and 29 combination agencies. Salaries for sixty-five kinds of full-time jobs were tabulated. Among nurses, some of these were directors, educational directors, generalized supervisors, specialized supervisors, generalized field nurses, specialized field nurses, trainees, practical nurses and others, the total number being 10,351. Among non-nurse professional workers connected with public health nursing staffs were nutritionists, social workers, statisticians, non-nurse physical therapists, and others; such workers numbered 209. Clerical employees in these agencies numbered 1,414. All salary information was for the year ended April 1, 1947. Average salaries used in this article are medians.

of such salaries was from $1,200 to $3,790. The median salary for field nurses was highest among those employed by city health departments, $2,527; next came those in boards of education, $2,481; third, $2,265 in county health departments; fourth, $2,243 in combination agencies; fifth, $2,178 in state health departments; and lowest, $2,161 in nonofficial agencies such as visiting nurse associations.

The 9 divisions of the United States, as outlined by the U. S. Bureau of the Census, were used for this salary study. Agencies in the Pacific Coast states paid their generalized field nurses better than did those in other parts of the country. Agencies in the South Atlantic states paid lowest salaries. The greatest differences between high and low salaries appeared among the state health department nurses, the median for generalized field nurses on the Pacific Coast being $3,050 and for those in the East South Central states, $1,837. Board of education salaries also varied widely, averaging $2,783 in the Pacific Coast states and $1,872 in the South Atlantic states. Salaries in nonofficial and combination agencies varied less by part of the country than did those in other kinds of agencies.

For the most part, generalized field nurses in large agencies were better paid than were those in small ones. However, in nonofficial agencies the worker in the one-nurse agency was better paid than those employed in most of the medium sized agencies. This is to be expected, since such a nurse should have more experience as she has little direct supervision. She also needs ability to work with her board and with the community.

Generalized supervisors—The range for supervisors' salaries in 1947 was from $1,920 to $4,620. The median salary was $3,040. Salaries of generalized supervisors exceeded those of generalized field nurses by the following percentages, as measured by the medians secured from the figures for the various kinds of agencies—in municipal health departments, 32 per cent; in county health departments, 27 per cent; in boards of education, 20 per cent; in state health departments, 39 per cent; in nonofficial agencies, 35 per cent; and in combination agencies, 22 per cent.

Directors of public health nursing services—The range of directors' salaries was from $1,900 to $9,500. The median salary was $3,292.[1] The number of nurses employed in the service affects the directors' salaries more than does any other single factor, the salary increasing as the size of the service increases. Directors' salaries were higher in nonofficial agencies than in other types of services. Agencies employing 15 nurses and more were used to show comparisons of directors' salaries with supervisors' salaries. Directors' salaries exceeded those of supervisors by the following per cents in the various kinds of agencies: in municipal health departments, 12 per cent; in county health departments, 21 per cent; in state health departments, 32 per cent; and in nonofficial agencies, 48 per cent. Median salaries for each position were used for these comparisons.

Non-nurse professional workers—Among 69 nutritionists, the median salary was $2,890; among 29 social workers, $3,060; among 26 statisticians, $3,043; and among 20 physical therapists, $2,486.[2]

Full-time clerical workers—The range of annual salaries paid to 1,414 clerical workers reported on the Yearly Review schedules was from $780 to $4,500. The median salary was $1,816. These figures also included any cost-of-living adjustments paid during the 12 months ended April 1, 1947. The median sal-

ary for generalized field nurses was $2,290, which is 26 per cent above the median salary for clerks. About one-half of all the clerical workers received from $1,550 to $2,100.

Table 1 shows the kinds of clerical jobs listed on the schedule sent to the agencies, the number of each kind for whom salary data were given, and the median salaries for these groups.

TABLE 1

Position	*Number for whom salary data were received*	*Median annual salary*
Total clerical workers	1,414	$1,816
Bookkeeper	55	$2,047
Clerk	520	$1,692
Registrar	27	$1,950
Secretary	197	$1,933
Stenographer	188	$1,860
Switchboard operator	16	$1,692
Typist	134	$1,676
Various kinds of work [a]	190	$1,750
All others [b]	87	$2,111

[a] Bookkeeper and secretary; clerk and stenographer; etc.

[b] Statistical clerks; office manager; file clerk; insurance clerk; supply room clerk; receptionist etc.

Clerks working in Pacific Coast states received higher salaries than those in other sections of the country, their median salary being $2,082. Clerks in the west south central states received low salaries, $1,407 being the median. In all the southern states, clerical salaries were low, and also in New England. In the latter area, among 148 clerks, only 5 received $2,160 or more, and 44 received less than $1,440. Salaries of nurses varied rather similarly as to geographical areas, being highest in the Pacific states. In New England, however, only salaries in nonofficial agencies were markedly low.

Clerical salaries were higher in agencies employing 25 nurses and more than in the smaller agencies. Among 756 clerks in these larger agencies, the median salary was $1,887; among 368 clerks in agencies employing less than 10 nurses, the median salary was $1,645. Only 5 of the 23 full-time clerks in one-nurse agencies were paid more than $1,560 a year.[3]

HOURS OF WORK, OCTOBER, 1946

Weekly hours of public health nurses are shorter than those of most members of the nursing profession, and are generally on a level with the peacetime hours of most workers in the United States. However, like those in hospital work, some public health nurses are required to be on call beyond their regular time of duty.

Late in 1946 the typical public health nurse worked on a schedule of 8 hours a day and 40 hours a week or less; such schedules were reported by 7 out of 10 respondents. Schedules of less than 8 hours daily and 40 hours weekly, however, were frequent, being reported by half the school nurses and one-third of the other public health nurses. As Table 2 indicates, schedules of more than 44 hours were rare:

TABLE 2

Work Schedule	*Per cent of Nurses*
Less than 8 hours a day and 40 a week	36
8 hours a day and 40 a week	34
8 hours a day and 44 a week	21
8 hours a day and 48 a week	2
Schedules not reported	7

Actual hours of the public health nurse averaged 40 a week during October, 1946.[4] Comparison of actual and scheduled hours indicates that a significant proportion of the nurses worked some overtime.[5] Thus, although schedules in excess of 44 hours a week were uncommon, about 1 in 10 nurses worked 45 to 49 hours and another 1 in 20 was actually on duty over 50 hours a week. Of those who worked overtime, about 3 out of 5 received some compensation for this work, generally in the form of time off rather than additional cash pay.

A complete picture of working time is not provided by hours on duty alone, since about 3 out of 10 public health nurses reported that they were required

to be on call for some time in addition to their regular hours on duty during October, 1946. Typically they were subject to call for less than 20 hours during the month studied and actually were called to duty for less than 10 of these hours.[6] Thus, time on call amounted to about 10 hours a month beyond time on duty for those nurses required to be on call. A few, presumably those who were the only nurses in small communities, reported more than 100 hours a month on call.

The Pacific Coast and the Middle Atlantic and Mountain states showed the shortest hours of work. The longest hours were found in the west central states, in which the average public health nurse was on duty about 43 hours a week in October, 1946. Hours on duty varied less among different types of public health agencies than did salaries. The longest hours were reported by county official nurses and the shortest by those working for federal and municipal governments; many of the latter are school nurses, who work less than 40 hours a week. The requirement of time on call was most common in nonofficial agencies.

PROFESSIONAL EXPENSES

During 1946 the average public health nurse spent $83—about $7 a month—for professional expenses. These included purchase of professional equipment, membership in professional organizations, laundry, cleaning and purchase of uniforms, state registration fees, payments to nurses' placement registries, and expenses of transportation during working hours, not reimbursed by the employing agency. These average expenses were equal to those for all other fields of nursing considered together, although a comparatively high proportion of public health nurses (more than 1 in 7) reported annual expenses of $200 or more. Presumably this group includes nurses who were required to maintain a car or pay for other transportation on the job out of their salaries. Expenses were somewhat higher for municipal and county official employees than for other public health nurses.

VACATION AND SICK LEAVE PLANS

Almost all nurses in the public health field receive paid vacations and sick leave after a year's service. Vacations in almost every case are at least 2 weeks long. The number reporting vacations of 2 weeks is equal to the number receiving 4 weeks or longer; 4 out of 5 nurses report these two periods. The longest vacations are provided federal government employees, who receive 26 working days of such leave annually, but most nurses working for nonofficial

TABLE 3

Annual Paid Vacations of Public Health Nurses with One Year's Service, by Employer

Length of Annual Paid Vacation	*All Agencies* *	*State Government*	*County Government*	*Municipal Government*	*Nonofficial*
All replies to question					
Number	1,008	165	168	271	288
Per cent	100.0	100.0	100.0	100.0	100.0
Per cent with paid vacations	97.2	97.0	99.4	95.6	97.9
One week	2.5	1.2	3.6	2.2	2.4
Two weeks	39.5	52.8	63.0	45.7	13.9
Three weeks	8.4	16.4	9.5	6.3	6.3
Four weeks or one month	33.9	13.9	13.1	24.0	65.9
Over one month	6.6	2.4	5.4	10.0	5.9
Other period	6.3	10.3	4.8	7.4	3.5
Per cent with no paid vacation	2.8	3.0	0.6	4.4	2.1

* Includes data for nurses who did not indicate their employer and for employees of the federal government, who receive 5 weeks (26 working days) of vacation annually.

agencies also reported vacations of at least 4 weeks. Employees of state and local governments (county and municipal) typically receive 2 weeks of vacation annually (Table 3).

Over half of the public health nurses receive 2 weeks of sick leave annually and one-tenth are allowed 1 week. The amount of leave allowed other nurses varies from less than 1 week to 3 weeks or more after a year's service. Sick leave is less frequent and the period allowed is shorter on the Pacific Coast than in the country as a whole. Most liberal sick leave provisions are reported by federal employees, who are permitted 15 work days of such leave each year.

RETIREMENT, INSURANCE AND MEDICAL CARE

Although provisions for retirement pensions are more common in public health than in all other nursing fields except industrial nursing, about three-fifths of the public health nurses are not covered by retirement pensions contributed to by their employers. Lack of provision for retirement and employment security was the leading source of complaint among public health nurses. Among the nurses covered by a retirement plan were all federal government employees and about half the nurses working for nonofficial and municipal agencies. However, only two-fifths of the state and less than 1 in 3 county nurses benefited from provisions for retirement pensions.

About 7 per cent of the nurses reported accident and health insurance and 8 per cent reported life insurance paid for at least in part by their employers. Such insurance was reported by relatively more employees of nonofficial organizations than of other types of public health agencies.

Provision of hospitalization and medical care paid for wholly or in part by their employers is less common for public health than for other nurses; only 1 out of 6 members of this field reported such arrangements. Among those who receive any benefits of this sort, periodic physical examinations are most common, reported by 1 nurse out of 8. Nonofficial agencies provide such medical benefits more frequently than official agencies; 1 in 3 nurses working for these private organizations reported hospitalization, medical care or physical examinations or a combination of such benefits.

ATTITUDES

Public health nurses expressed less dissatisfaction with their work than nurse educators, private duty or institutional nurses, and were about as satisfied as industrial and office nurses. Their dissatisfaction was largely concentrated on 4 economic aspects of their work—lack of provision for retirement and security against unemployment, rate of pay, provisions for promotions and pay increases, and opportunities for promotions. These were also the leading sources of dissatisfaction in other fields of nursing. About 1 out of 3 public health nurses expressed dissatisfaction with each of these provisions, and they were more dissatisfied with their pay than were nurses in any other field except institutional work. One in 5 also criticised methods of settling grievances and making suggestions for changes in procedures (Table 4). Among the other aspects of their work considered individually, less than 1 out of 5 public health nurses expressed dissatisfaction; in most cases the proportion of dissatisfied replies did not exceed 1 in 10.

Federal employees were generally more satisfied, and those employed by county and municipal governments were less satisfied than other public health nurses. In summary, agency field nurses expressed the most dissatisfaction and school nurses the least.

TABLE 4

Opinions of Public Health Nurses Regarding Their Work

Item	*Per cent of Nurses Expressing*		
	Dissatisfaction	*Satisfaction*	*No Opinion* *
Retirement and employment security	37.5%	43.6%	18.9%
Methods of determining promotions and pay increases	33.1	39.6	27.3
Hourly rate of pay	31.6	35.2	33.2
Opportunities for promotion	28.2	37.1	34.7
Procedures for settling grievances and suggesting changes in procedures	19.8	51.5	28.7
Nonprofessional help	16.7	29.9	53.4
Quality of supervision	15.2	55.5	29.3
Educational opportunities	14.6	61.8	23.6
Timing of duties	13.4	47.5	39.1
Paid vacation provisions	11.2	72.1	16.7
Professional and social contacts and status	11.0	70.3	18.7
Proportion of time on professional duties	10.9	48.8	40.3
Number and arduousness of duties	10.2	44.9	44.9
Locker and restroom facilities	8.4	11.9	79.7
Length of work day and week	8.3	73.7	18.0
Opportunities to exercise professional judgment	8.2	73.9	17.9
The job as a whole	6.4	81.5	12.1
Pride or gratification in service to ill and community	6.2	71.4	22.4
Amount of time on call	2.8	23.4	73.8
Fees paid registry for jobs	2.2	3.5	94.3
Advance notice of hours schedule	2.0	34.3	63.7
Split shifts	1.4	2.2	96.4
Requirement of night-shift work	1.2	3.5	95.3

Total number of replies — 1,249

* Includes those to whom the item did not apply as well as those expressing no opinion.

SHORTAGE OF NURSING CARE

How do the salaries and other working conditions in public health and other fields of nursing affect the failure of the supply of nursing care to keep pace with increased demands? Available information indicates that these factors affect the supply of nursing care primarily because they do not attract potential student nurses. At present many such students apparently believe that office or factory work offers in comparison more attractive salaries and working conditions than those afforded by the nursing profession, especially when allowance is made for the fact that these other fields do not require the extensive training needed by professional nurses. Reference to available data suggests that in terms of economic reward nursing may compare unfavorably with some other important categories of employment open to women. This points to an obvious remedy for the shortage of nurses.

REFERENCES

1. For further comparisons see *Pub. Health Nurs.*, Oct., 1947, p. 525.

2. For further comparisons see *Pub. Health Nurs.*, Feb., 1948, p. 94.

3. For further comparisons see *Pub. Health Nurs.*, Mar., 1948, p. 151.

4. Averages used here are medians (the values below and above which exactly half of the replies fell).

5. Actual and scheduled hours differ because of absenteeism and compensatory time off, on the one hand, and overtime, on the other.

6. These hours on duty are included but hours on call are excluded from the actual hours on duty discussed in preceding paragraphs.

Personnel Administration in Public Health*

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PERSONNEL administration may be defined as the application of formal management techniques to the human relations problems of an organization. Obviously, the necessity for formalized techniques is open to question in any field. Are such techniques the result of sound experience and scientific validation, or are they the ritualistic procedures and mystifying jargon of the professional red-taper? Do they simplify or complicate the performance of the primary job for which the organization is established?

We cannot dodge the human problems in any agency. Personnel activities go on whether we have formalized techniques or not. Any organization, even the smallest, has problems of hiring staff, setting their pay rates, training and supervising them, establishing their hours and working conditions, making judgments as to their performance, discharging or promoting them. Whether an agency needs personnel administration in a formal sense varies with its size and character. It is important that the decision as to the use of personnel procedures and techniques be made after consideration of the experience of other organizations, rather than in ignorance of such experience. The experience of both public and business organizations should be examined and the successes and failures considered by any public health department before it decides on the kind of personnel set-up adapted to its needs.

While the basic problems of staff management are the same in government and in industry, one additional consideration, not present in private industry, enters into the determination in a public agency as to whether to apply personnel administration as distinguished from personal administration. Even in the same activity, there is some difference between administration in an organization that is the private property of those who direct it, and a public agency, owned by the citizenry at large. An implication of political democracy is the right of people to scrutinize administrative processes. This affects such administrative processes as selection. For example, the public in a democracy regards it as a right of a citizen to be considered for a career in public employment on the basis of objective evaluation of his qualifications rather than on the basis of his personal appeal to the administrator. In other words, in addition to utilizing the contribution of personnel administration to more effective management of the organization, which is the primary consideration, a public agency must give incidental consideration to doing this in

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† The opinions expressed in this statement are those of the writer, and do not necessarily represent the views of the Federal Security Agency.

a way which recognizes citizen concern in a merit system as a nonpartisan and democratic instrument of government.

Whenever we consider the question of formalized administration, we have to consider an aspect of what might be called the polarity between rule and discretion. This is true of formalized personnel procedures as it is true in other areas. If one operates under rules, certain difficulties appear. A system based on binding regulations may be rigid and may tend to become legalistic. On the other hand, without any regulations, action may be unpredictable and administration chaotic. Uncontrolled discretion may be exercised wisely and consistently, or arbitrarily and even venally. There is no easy answer to the dilemma. It is difficult, but not impossible, to have a system that is objective and understandable, yet with sufficient flexibility in administration to meet new problems as they arise. Certainly, the emphasis should be upon realistic and resilient administration rather than upon regulations as such. As I have said on another occasion, the emphasis in a merit system should be on merit rather than on system. However, unless definite personnel rules are promulgated, adequate machinery established, and proper procedures installed, the merit principle may not be put into effect. The necessity for rules and understandable procedures is more important in those aspects of the merit system that deal with public competition for jobs. But effective dealings with employees in an agency also require a clear understanding on their part of the conditions governing employment.

We have to be careful that we do not include, in formal regulations, provisions which fail to contribute to the efficient functioning of the specific agency and which are not necessary from the overall standpoint of a public agency in a democracy. We must find means of attaining some degree of objectivity in procedures without sacrificing essential flexibility of administration. Experience in the field of personnel administration will help us by holding up horrible examples as well as instances of real contribution to smooth operation.

Personnel administration has grown up as an incident of large scale administration, first in industry and then in government. Contributions to its method come from two major sources: industrial engineering and psychology. When the economic system depended for industrial production largely upon the artisan, with perhaps an apprentice or two, there was little need for personnel administration as such. With the industrial revolution and the development of large scale industry, management had to become more conscious of its problems in planning, organizing, and coördinating its activities. The human relations aspects of the work situation could no longer be handled in the same way as when the master craftsman and his apprentice worked side by side. Problems of selection, supervision, training, and labor relations emerged. The high paid vice-president in charge of personnel is an illustration of the value that big business sets on increased production through improved human engineering. The management techniques developed by the industrial engineer are illustrated in the personnel field by such developments as job analyses and systems of job classification, by salary surveys and pay scales set on recognized bases. Many of these techniques are applicable in public agencies.

There is another source from which techniques used in modern personnel administration stem—the research of the psychologist, particularly the psychometricians. Human nature is almost countlessly permutated in its variability from person to person. Acceptance of the con-

cept of the range and quantifiability of individual differences is relatively new. The methods of defining and measuring these differences are still newer. Scientific research has established the fact that individual differences can often be measured by methods that do not seem valid on their face. This is comparable to measuring body temperature by something that at first glance seems wholly unrelated—a column of mercury in a glass tube.

Even though we all cherish, to some extent, the notion that we are good judges of people, the utilization of scientific techniques in selection has been so well demonstrated, both in industry and in government, that its value is not seriously questioned even by those who oppose its use on the grounds of feasibility in a given situation. It should be noted that there is a tendency to underestimate rather than to overestimate the differences in the capacity of individuals engaged in a given operation. We sometimes tend to speak of education and experience as though all persons exposed to the same education and experience were of relatively equal competence. In practice, we do not actually accept this, but sometimes we draw up qualifications statements that seem to imply it. Experience has indicated the very real contribution to selection that the application of modern scientific techniques can make in the field of public health.

In considering the utilization of personnel administration in a large organization, we must recognize that the head of such an organization cannot possibly specialize in these problems. His primary task is the application of content in his own professional field; and in a field such as public health, where the boundaries are constantly expanding, keeping abreast of professional developments is itself a most difficult task. It has been said that doctors make poor administrators. I do not believe that this is necessarily so; there are numerous instances of outstanding professional administrators. However, concentration on professional content may tend to make one ignore or minimize the administrative aspects of his job. Moreover, in the professions there is an individualistic tradition which fosters perfectionism. In medicine the doctor usually starts out as an individual practitioner. It is difficult for someone brought up in that tradition to delegate important responsibility.

The administrator in a professional field must give important attention to administrative management, as well as to professional content. As part of this concern with administration, he must find some way of divesting himself of details in personnel as well as in other administrative areas. Nevertheless, every administrator must concern himself with the handling of men in his organization. He should, therefore, set basic personnel policies but avail himself of technical assistance in their development and application. This implies having a personnel officer, though not necessarily a full-time one. A word of caution might be added here: there is no particular virtue in setting up a job of personnel officer if it is not filled by someone of real competence. The selective process is critical; one cannot identify merely by training or experience those who have a real contribution to make. The public health field has no monopoly on incompetence. There are persons in the personnel field, as well as in other fields, who are lacking either in technical knowledge or intelligence or in the personal attributes necessary in a human relations job. Those dealing with personnel problems require not only a high intelligence and knowledge of the field, but also sensitivity to the reactions of others, freedom from bias, and flexibility in individual and social situations.

Assuming that a public health department obtains a qualified personnel

officer, just what will he do? I will not attempt to detail all the activities of the personnel office but will deal with some illustratively.

An essential to efficient management is analysis of each job to be done and its definition in terms understandable to the worker and useful for other personnel processes such as selection and training. The classification of jobs on the basis of their duties and responsibilities simplifies many phases of administration. The process has important administrative implications in avoiding overlapping or gaps in responsibility. However, job classification must not become an end in itself or become shrouded in specialized terminology. Participation of the administrative officials of the agency and of the employees of the agency is necessary in classification even if it is done by a civil service agency or outside consultants. Similarly, the collection and analysis of data as a basis for establishing pay plans should be approached in a simple and straightforward fashion. A pay plan must not only be based upon some equitable principle, such as paying like rates for like jobs, but must provide for recognition of superior individual performance. This is done through a plan for periodic salary advancement based upon considerations of seniority and efficiency.

Employee training is sometimes neglected in an agency which is too small to have a full-time training officer. Since training is essentially part of effective supervision, every agency can and should have a training program. The role of the personnel or training officer is essentially that of stimulating and facilitating the development of a coördinated program rather than the giving of training courses. However, certain types of induction training, involving the introduction of the employee to the organization and giving him basic information about its structure and regulations, may be the direct responsibility of the personnel officer. Various types of technical training on the job should be given by the best available specialists. The program as a whole should be planned to permit employees who come in on the lower rungs of a career ladder to rise as they become fitted to assume greater responsibilities. Liaison with educational institutions and the development of a policy for educational leave are related activities. The preparation of employee handbooks is another common function of the personnel office.

The personnel office should also be concerned with services to employees in relation to their individual problems, an activity sometimes called counselling. In any organization there is a wide range of individual problems from that of housing of employees in a community new to them to more intimate personal problems. Employees may have financial or domestic troubles affecting their work which they would be loath to discuss with their supervisors but on which they would welcome sympathetic and understanding help outside the line of supervision. Other personnel activities include employee relations, both with unions or other organized groups, and in connection with individual grievances. The establishment of a suggestion system has been found worth while in some organizations.

The process of evaluating employee performance is an inescapable one. One talks in the personnel field about service ratings as a formal method of recording periodic judgments. We must not let jargon obscure the fact that we are recording opinion. The administrator must decide whether it is better to do this systematically or informally as the need arises for a judgment. There is evidence to support the view that a system of service ratings, based upon standards of job performance, will improve the process of judgment and

supervision, but it is important to note that these performance standards must be developed within the organization. If a service rating form and procedures are transplanted from one state to another, without considering whether they are needed and wanted by supervisors and staff, the result may be red tape and the hampering rather than the simplifying of administration.

Problems of employee placement, separation, and promotion may be facilitated by the personnel office. The functions of such an office include working with the civil service or merit system agency in relation to examinations. Such liaison should help in achieving a planned examination program and in speeding up the examination process. The personnel office may also give assistance in recruiting and utilization of professional consultants by the civil service agency.

I do not propose to discuss the subject of civil service at any length, but it should be noted that the civil service field furnishes an admirable example of our American tendency to regard problems as solved when laws are passed. There have been several waves of civil service reform, bringing with them statutory establishment of formal systems. Some of these are well administered; some are poorly administered. The existence of a civil service system is no guarantee that it is better than a spoils system. Inevitably the best civil service system brings with it a certain amount of rigidity. How much of this is necessary is debatable, and how much is a reasonable price for freedom from worse alternatives is also debatable. It has been said that the only thing worse than civil service is no civil service. I do not believe that we have to accept a rigid system that does not in point of fact produce results commensurate with the time and effort involved. In order to achieve such results, it is essential that persons engaged in various professional fields such as public health play a continuing and energetic role in the administration of the system. They must understand it; they must criticise it.

It is well to remember that it is the operation of the system that we must evaluate and not merely its framework. The best examination is of no value if it is so long drawn out that competent candidates are lost in the process. The most elaborate administration of a compensation plan is valueless if the basic pay rates are such that competent persons cannot be recruited and retained. The implications of this for the public health field are clear. Professional personnel must be utilized at various places in the merit system process—in recruitment, consultation on examinations, and evaluation of results. Within agencies, supervisory staff and professional personnel must be concerned with personnel practices, including the development of performance standards as a basis for rating employees, the establishment of realistic qualifications that will broaden the recruitment base and permit the selection of the best available persons, and the establishment of working conditions that will promote efficiency and job satisfaction.

It must be recognized that the techniques of personnel administration, even though of proved value, are no substitute for administrative leadership. The head of any organization must have interest in staff problems, courage, and perspective, as well as professional competence. Personnel administration may aid the good administrator, but it cannot take his place.

It has often been said that formal merit systems prevent the discharge of employees. This is true in some cases, but, basically, discharging anyone is an unpleasant job. All of us know of educational institutions and business organizations where deadwood is tolerated because of inertia or the unwillingness

of executives to take needed action and stand up under pressure. If a personnel system is so tied up with red tape that it is impossible to discharge the incompetent, there is something wrong with the system. We should not accept something that is called a merit system and stop there. There are systems that impede good administration, and there are some that are definitely aids to good administration. Within any jurisdiction, one must critically examine the functioning of the system and vigorously support its sound features, and just as vigorously support necessary change.

In a scientific field, open-mindedness is clearly a condition of progress. Yet it is a curious thing that, outside their own fields, scientists may permit their unexamined prejudices to govern their actions. The attitude of administrators in the public health field toward personnel administration should be open-minded but not naive. One who looks to personnel administration as a panacea for administrative ills is doomed to disappointment. Unquestioned acceptance is as bad as defeatist cynicism. Properly applied, the techniques of personnel administration can contribute to the solution of management problems but will not prevent those problems from recurring. Improperly applied, the same techniques can be a source of continuing frustration to the administrator.

In a governmental organization, we do not have a criterion of profit to determine success or failure. Nevertheless, evaluation of accomplishment is imperative. The criterion of public service is the substitute for the criterion of profit. I sometimes think that we do not recognize that there is as much of a difference in efficiency between the best administration and the poorest administration of a governmental organization as there is between a firm that makes a handsome profit and one that goes bankrupt because of inefficiency. There are public agencies that should file petitions of bankruptcy, and there are others that are entitled to stand upon their records. We tend to blanket them all together as bureaucracy. Before the public and legislatures can make a valid differentiation, administrators themselves must be prepared to recognize the differences and evaluate the causes.

I do not mean to imply that a total program should be evaluated on the basis of its personnel administration. An agency may have a poor personnel program and a good health program, or it may have a good personnel program and a poor health program. Nevertheless, if one examines the proportion of the budget of any health department that is spent for personal services, the critical importance of personnel administration will be apparent. It will be agreed that the human element looms large and that the job satisfaction and the efficiency with which the individuals are performing their work are important factors in the success or failure of the program.

At the same time that we keep in view the primary goals of the organization and assure adequate attention to professional content, we must include within our perspective the techniques of administrative management. Personnel administration, of course, will not solve the human relations problems of any organization, but it should promote more effective management and hence promote the accomplishment of the primary goals of the organization. Effective personnel administration has a modest but nevertheless significant contribution to make in attaining the goal of effective public service.

Factors of Sewage Pollution of Oyster Beds in Galveston Bay*

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IN February, 1944, an outbreak of food poisoning occurred in Galveston as the apparent result of eating raw oysters at a fraternity banquet. No samples were available for laboratory examination; however, the exact meal was easily determined in that several guests and members who were ill ate all other meals at their homes. Epidemiological evidence showed conclusively that raw oysters were the cause of the outbreak, and all other foods served were eliminated. These facts have been reported by Wise, Winston, and Nau [1] in an earlier publication. A thorough bacteriological study of oyster beds in Galveston Bay, where the oysters had been collected, was instigated to determine the sanitary conditions of the oyster beds and to study various factors which might influence sanitary quality.

It has long been known that oysters may carry pathogenic bacteria. Many cases of typhoid fever and gastrointestinal disturbances have been attributed to oysters and other shellfish. In 1818, several decades before the discovery of microörganisms as the cause of infectious diseases, Pasquier [2] concluded that cases of gastrointestinal illness resulted from the eating of raw oysters collected in sewage polluted waters. Johnston-Travis [3] in 1895 attributed cases of typhoid fever and enteritis in Naples and Rome to oysters which had been dredged from clean waters and kept for a period of days or months in water near a sewage drain. In Brighton, England, the cases of enteric fever ascribed yearly to oysters by Newsholme [4] were 21 in 1894, 19 in 1895, 31 in 1896, 30 in 1897, 41 in 1898, 52 in 1899, 17 in 1900, 9 in 1901, and 21 in 1902.

An epidemic of typhoid fever occurred at Wesleyan University in Middletown, Conn., in 1894, and was reported by Conn.[5] Thirty cases were involved, and 4 deaths occurred. All had eaten at a fraternity supper where raw oysters had been served. In an excellent epidemiological investigation it was found that the oysters had been obtained from a fisherman who kept them in a river near his sewer outlet. The fisherman's wife had died of typhoid fever and his daughter was ill with the same disease.

* This study was made at the Medical Branch of the University of Texas when Robert I. Wise was Assistant Professor in the Department of Bacteriology and Joe B. Winston was Associate Professor in the Department of Preventive Medicine and Public Health.

Broadbent [6] in 1895 reported 11 cases of typhoid fever caused by eating oysters. Thresh and Wood [7] in 1902 reported cases of typhoid fever and gastroenteritis caused by oysters bought from one dealer. Evidence collected by Marvel [8] in 1902 pointed to oysters as the source of many cases of typhoid fever in Atlantic City. The oysters were being "fattened" in water polluted by sewage from the city.[9]

An outbreak of 50 cases of typhoid fever was described by Brooks [10] in 1916. These cases occurred in 6 municipalities in New York State, in 3 of which there had been no cases in over 10 months and in one none in 5 months. There was apparently no possible common source of infection other than oysters purchased from various dealers.

Extensive outbreaks of typhoid fever occurred in Chicago and New York at the same time in 1925. Reports were made by Bundesen [11] and Harris.[12] In Chicago 129 cases involving 16 deaths occurred in 52 days. All foods except oysters were excluded as the probable cause. The oyster plant which had supplied the oysters was located on Long Island and found to be in excellent sanitary condition. Oysters had been received from beds where two fishermen were employed. These men had typhoid fever, and each day during the incubation period of their illness, they had worked over the oyster beds and, having no toilet facilities on the boat, their discharges were dumped overboard on to the oyster beds. A large sewer line was also found to be emptying approximately 100,000,000 gal. of sewage into a nearby area. In the New York epidemic there were 914 cases of typhoid fever, of which 506 gave a definite history of eating oysters as the only likely source of infection. The water supply, milk, ice cream, ice, and vegetables were eliminated as a source of infection.

Extensive bacteriological studies of oyster beds have been made along the Atlantic Coast of the United States. Narragansett Bay was studied by Fuller [13] in 1902 at which time the City of Providence, R. I., was discharging daily about 14,000,000 gal. of sewage into the bay. Studies showed that water and all oysters within 2 miles from the sewer opening showed coliform organisms; 30 per cent of oysters and 60 per cent of water samples 5 miles from the sewer showed coliform organisms.

Johnston [14] studied the effect of the tide on evidences of sewage pollution in water above oyster beds. He found the number of coliform organisms to decrease during flood tide and increase significantly during ebb tide. These results demonstrate the variation in results one may obtain by making only one test or paying little attention to conditions which may influence the laboratory results.

Several investigators have observed a definite relation between the temperature of water and coliform content of the oysters. Gorham,[15] Joseph,[16] and Gage and Gorham [17] demonstrated that in waters along the northern Atlantic Coast of the United States the bacterial content of oysters in polluted water at low temperatures is abnormally low. As soon as the temperature of the water began to increase, the coliform content of the oysters increased to a high count which was held throughout the summer and decreased in the fall. This phenomenon was attributed to the slowing down of physiological activity of the oysters as a result of decreasing temperature. Observations on the physiology of oysters at various temperatures were made by Galtsoff.[18] The rate of flow of water produced by the gills of the oysters is controlled by the temperature. No current is produced at 5°C. and below, and the oyster remains closed and in a state of hibernation. Bacteria are eliminated. The

water flow in the oyster begins as the temperature reaches 8°C. The optimum temperature for maximum water flow was reported by Galtsoff to be between 25° and 30°C., at which temperature the maximum rate of flow was 3.9 liters per hour. Cumming,[19] studying the sanitary conditions of shellfish in the lower Potomac River, found that January and February were the months when the coliform content of water at the mouth of the river was highest and the coliform content of the oysters from the same locality was lowest.

THE PRESENT INVESTIGATION

It was the purpose of this investigation to (1) learn some of the important facts concerning sewage pollution of oyster beds and the water over the beds, (2) to follow the changes in pollution by frequent sampling over a period of time, (3) to study the effect of external factors on sanitary conditions, and (4) to determine whether or not conclusions based on similar studies made along the North Atlantic Coast of the United States are applicable for conditions in the Gulf Coast area.

Hopkins[20] has pointed out differences in oyster culture in waters of the Gulf Coast and those of the North Atlantic Coast even though the oysters are of the same species (*Ostrea virginica*). Oyster reefs on the Gulf Coast are usually found in shallow water no more than 2 to 8 feet below low water level, whereas, in northern waters, oyster beds may be under much deeper water. The shallow bays of the Gulf Coast are more readily affected by rains and changes in temperature. The spawning season of oysters in southern waters is long as compared to a short season in northern waters. It is known that in northern waters low temperatures are reached and the oysters enter a state of hibernation. Water temperatures reported necessary for hibernation and cessation of water flow and feeding in the oyster in northern waters are rarely reached in Gulf Coast waters. According to Gunter[21] oysters of the Gulf Coast do not hibernate, but feed and grow mainly during the winter and are fattest in the late winter and early spring.

Galveston Bay and its oyster reefs have been described by Galtsoff.[22] The bay extends 24 miles from its entrance at Galveston Island to Morgan's Point at the mouth of San Jacinto Bay. It has an average depth of 7 feet. Its branches are East Bay, which is separated from Galveston Bay by an oyster reef (Hanna Reef), Trinity Bay on the north, and West Bay on the south. Red Fish Bar is a chain of oyster reefs extending from Edwards Point to Smith Point, and divides Galveston Bay into southern and northern parts. Three major watersheds discharge fresh water into Galveston Bay. The Buffalo Bayou watershed collects water from the Houston area and serves as the Houston ship channel. Buffalo Bayou watershed is 75 miles long and is 1,065 sq. mi. in drainage area. It enters Galveston Bay through San Jacinto Bay at Morgan's Point. San Jacinto River watershed serves a drainage area 3,018 sq. mi. in area and heads 140 mi. from its entrance to Galveston Bay at San Jacinto Bay. Trinity River serves a large area, 17,600 sq. mi. in drainage area, and heads 360 mi. from its mouth at the northern part of Galveston Bay.

Three oyster reefs in Galveston Bay are used for commercial harvesting. The locations of Hanna Reef and Red Fish Bar are mentioned above. Half-Moon Reef was the third reef studied in this investigation and is located approximately 1 mi. east of Texas City and north of the Texas City dike.

Untreated and partially treated sewage enters Galveston Bay from several sources. Houston, during the year of

this investigation, was discharging untreated and partially treated sewage into Buffalo Bayou. Texas City discharged daily approximately 500,000 gal. of domestic sewage directly into Galveston Bay south of the dike, and the city of Galveston discharged approximately 12,000,000 gal. of sewage daily into the harbor north of the city between Galveston and Pelican Islands. Smaller communities around the bay and located on Buffalo Bayou and Trinity River contributed to the pollution.

METHOD OF STUDY

Five water samples were collected from each reef every month from March, 1944, through January, 1945, with the exception of the months of April, May, and June, 1944. Oyster samples were collected from each reef every month from July, 1944, to January, 1945.

Both the total coliform content and the *Escherichia coli* content were determined on all water and oyster samples using the procedures of *Standard Methods for the Examination of Water and Sewage*[23] to determine the most probable number per 100 ml. of sample by inoculating 5 portions in each of 3 dilutions in geometric series in tubes of lactose broth, streaking to E.M.B. agar and transferring typical coliform colonies to lactose broth and citrate agar. The oysters were prepared and studied according to *Recommended Procedures for Basteriological Examination of Shellfish and Shellfish Waters.*[24] Koser's citrate broth was used to differentiate *E. coli* from other coliform organisms.

Measurements for salinity and turbidity were made on each sample of water. Water and air temperatures were recorded at the time of collection.

RESULTS

The coliform content of the water (Table 1, Figure 1) was found to be greatest in late winter and early spring. The two reefs, Red Fish and Half Moon, which are close to sources of pollution, showed a decrease during summer months. The coliform content of water over Red Fish and Half Moon Reefs decreased from 947 and 852 respectively in March, to less than 10 for Red Fish and less than 30 for Half Moon in July. These lower values were held through the summer and fall. In January the coliform content increased to 482 for Red Fish and 378 for Half Moon. Hanna Reef which is not near the ship channels and less subject to currents which would accumulate sewage, showed least evidence of pollution; the highest coliform content found was 11 in March.

The coliform content of the oysters (Table 2, Figure 1) in general follow the same course as that of the water. The coliform contents of oysters in July were Red Fish 49, Half Moon 100, and Hanna 49. Red Fish and Hanna

TABLE 1

Coliform Content of Water Samples
Most Probable Number per 100 ml.

		Mar.	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*
Red	Av.	947	1	6	1	0	1	3	482
Fish	Max.	1,600	5	33	2	0	2	8	1,600
Reef	Min.	350	0	0	0	0	0	0	70
Half	Av.	852	23	0	25	26	0	3	378
Moon	Max.	1,600	49	0	79	33	0	8	540
Reef	Min.	170	2	0	2	2	0	2	180
Hanna	Av.	11	1	0	1	1	0	1	0
Reef	Max.	17	2	0	2	2	0	2	0
	Min.	4.5	0	0	0	0	0	0	0

FIGURE 1—Mean Coliform Contents of Oysters and Water over the Oyster Beds from March, 1944, to January, 1945

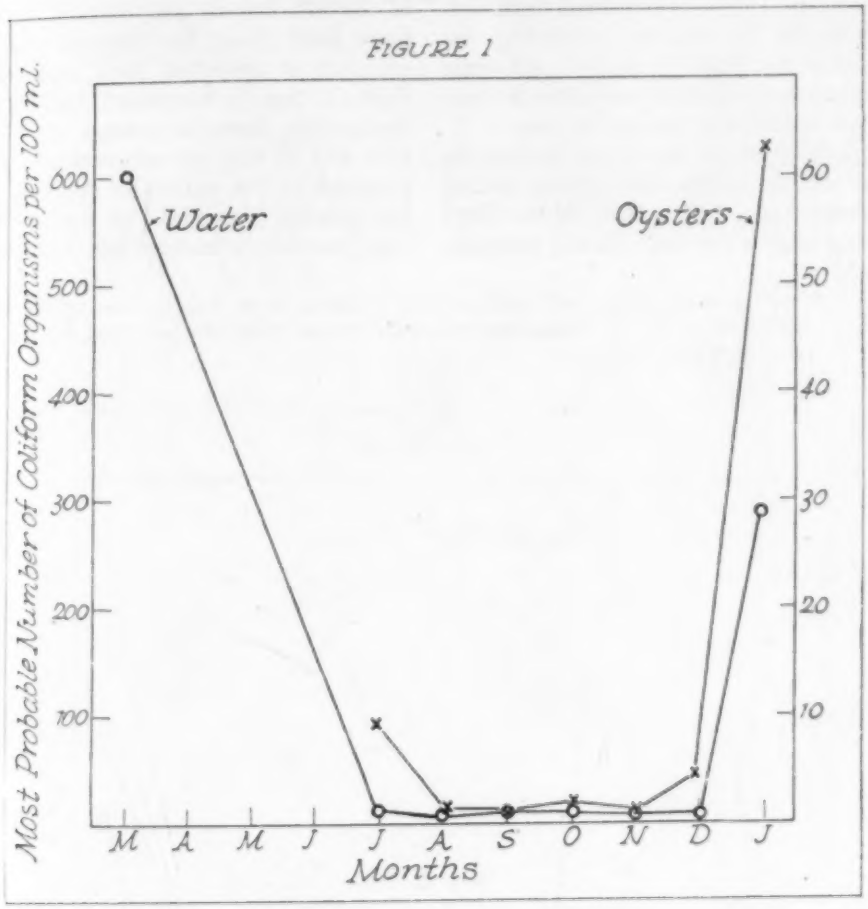


TABLE 2

Coliform Content of Oysters
Most Probable Number per 100 ml.

	July	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*	*Jan.*
Red Fish	49	2	2	0	6.8	4.5	1,600
Half Moon	170	17	22	45	13	110	240
Hanna	49	0	2	0	2	6.8	23

showed decreases to numbers less than 10. Half Moon fluctuated between 13 and 45 from August to November. Half Moon showed an increase to 110 in December and 240 in January. Red Fish showed the highest coliform content observed in January when an increase to more than 1,600 occurred.

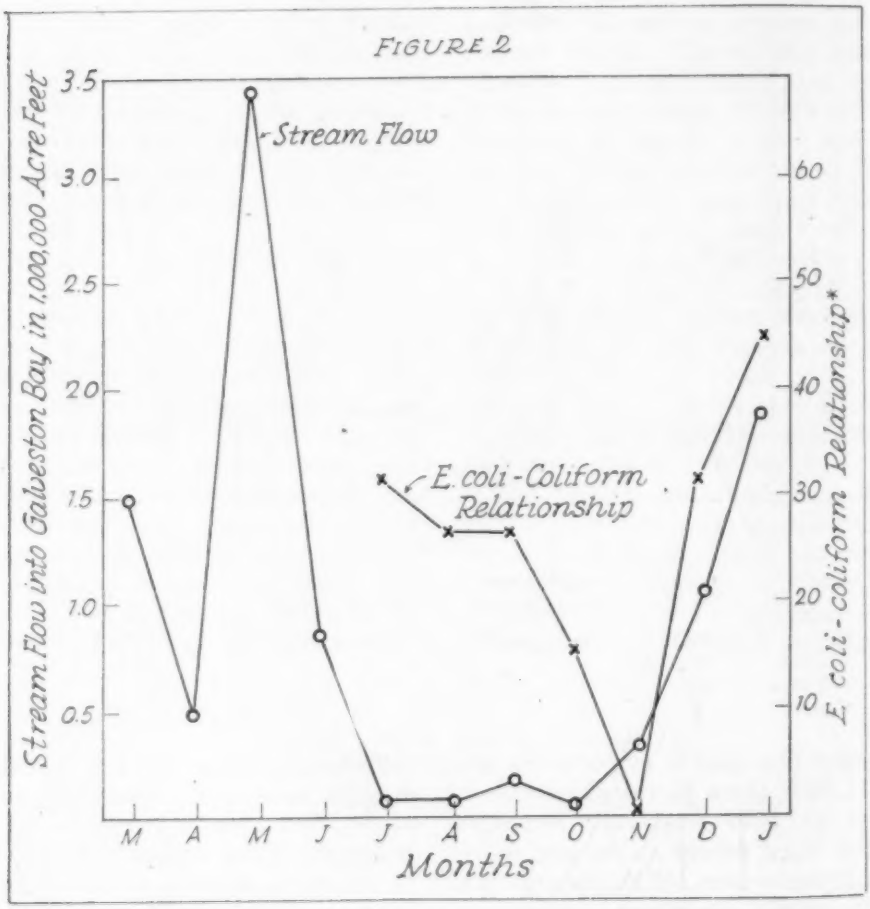
The oysters show greater numbers of coliform organisms per 100 ml. than does the water, as is shown in Figure 1. Little information is gained by calculating the ratios of coliform contents of the water to those for the oysters. Ratios vary from 0.008 to 2.7 and do not correlate with temperature, season, or any other factor studied.

The turbidity of the water was found

to be high (400–550 p.p.m.) in late winter and fell to approximately 50 p.p.m. in July, a value held until December. In January turbidity increased to 110–215 p.p.m. All reefs showed approximately the same fluctuations in turbidity during the year.

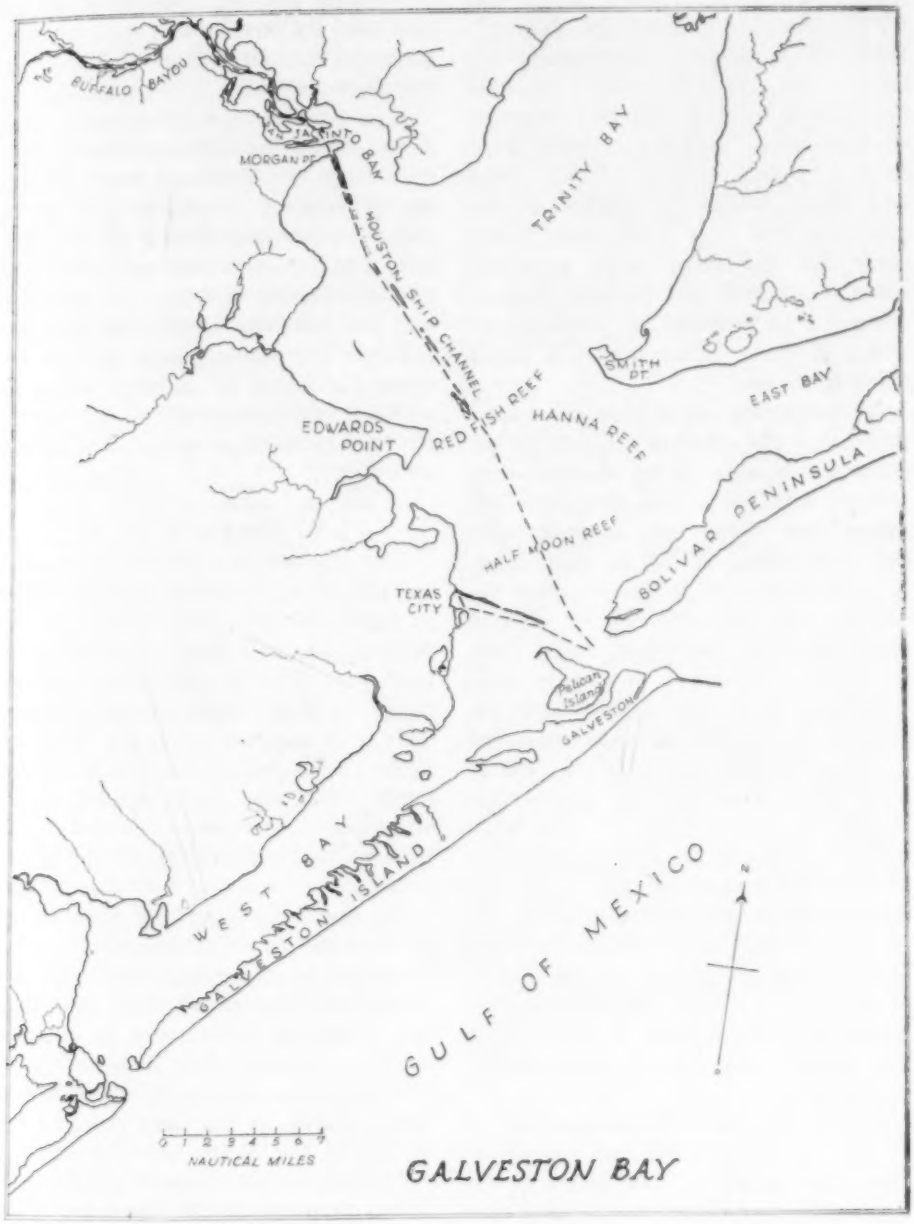
Salinity of the water was low during the winter months and higher during summer and fall. Half Moon Reef being nearest the Gulf showed naturally the greatest salinity and Red Fish Reef the lowest, since it is nearest the mouth of Buffalo Bayou and Trinity River. Since Half Moon Reef showed greater evidence of pollution than Red Fish Reef, it can be concluded that cities discharging domestic sewage near the Gulf end of the bay contribute to the pollution of the oysters in the bay, in that sewage is carried into the bay by tidal currents; otherwise Red Fish Reef

FIGURE 2—Relationship of *E. coli* to Total Coliform Water Samples over Oyster Beds in Galveston Bay in Comparison with Total Stream Flow into Galveston Bay during the Same Season



* This relationship is represented by the formula $100\text{-}100\left(\frac{\text{MPN } E.\ coli}{\text{MPN coliform}}\right)$. Only water samples containing more than 2 coliform organisms per 100 ml. were used in the calculation.

FIGURE 3



would show greater evidence of pollution than Half Moon Reef since all the fresh water entering Galveston Bay from the Trinity River and Buffalo Bayou watersheds crosses Red Fish Reef.

It was observed that during the period of this investigation the temperature of the water never reached the point necessary for hibernation of the oysters and cessation of water flow through the oysters. In the 20 year

period (1922–1942) the lowest mean temperature value for any month was 7.9°C., which occurred in January, 1940. The minimum temperature fell below 5°C., the temperature reported by Galtsoff as necessary for cessation of water flow, during the years 1924 (4°C.) 1940, (1.5°C.), and 1942 (4.5°C.). It can be concluded that oysters in the Gulf Coast area rarely reach the low temperature at which water flow ceases and bacterial flora is decreased as reported by investigators who have made similar studies in North Atlantic waters.

A comparison of Figures 1 and 2 shows that the coliform contents of the water and oysters during the year vary directly with the stream flow into Galveston Bay. They vary inversely with the temperature of the air and water. It is natural that salinity varied inversely and turbidity varied directly with degree of pollution, since these factors are dependent on stream flow.

It is evident that a high coliform count in the water and oysters occurred concurrently with an increased flow of fresh water into the bay during the winter and spring seasons. The coliform content of the oysters increased as the temperature of the water decreased, and was highest during the latter part of the "oyster season." These findings are in contrast to the reports of Gorham [15, 17] and Joseph,[16] who reported higher coliform counts during the summer and lower counts during the winter.

Figure 2 shows the relationship of *E. coli* to the total coliform content of the water samples. The ratios of the mean values of *E. coli* to the total coliform content of the samples have been calculated as percentages and subtracted from 100 per cent in order to invert the curve for better comparison with variation in stream flow. It can be observed that as the stream flow was at a minimum during the summer and fall season, the percentage of *E. coli* among the total coliform group increased. As stream flow into the bay increased in December and January the percentage of *E. coli* decreased.

It is possible that these results may be explained by differences in dilution of sewage by drainage water during various seasons. In winter and spring there is more rainfall and greater dilution of sewage with a decrease in *E. coli* per unit volume of water. In the summer and fall seasons there is less rainfall over the drainage area and the decreased dilution of sewage results in an increased percentage of *E. coli* in the total coliform group per unit volume of water.

SUMMARY

The changes in coliform content of oysters and water above the oyster reefs in Galveston Bay, Tex., were found to decrease in the spring, remain at low level from July to December, and increase to high values during January. This is in contrast to reports made by investigators who have made similar studies along the North Atlantic Coast and report a decrease in coliform organisms as the temperature of the water falls.

On the Gulf Coast the temperature of the water rarely decreases to a point necessary to cause hibernation of the oyster and cessation of water flow, thus the oysters do not show a decrease in coliform content when harvested from polluted waters during the usual winter temperatures, as has been reported for oysters of the North Atlantic Coast.

Oysters usually showed greater pollution than the water, however, ratios of coliform contents of water to oysters did not correlate with other factors studied and were of no informative value.

The total volume of water entering the bay each month correlated with the degree of pollution. Salinity varied in-

versely with the volume of water entering the area and inversely with the coliform content. Turbidity of the water varied directly with the water volume and directly with the coliform content.

The percentage of *E. coli* to total coliform flora in the water over the oyster beds increased from July to November as stream flow was minimal. The percentage decreased markedly in December and January as stream flow into Galveston Bay increased.

REFERENCES

1. Wise, R. I., Winston, J. B., and Nau, C. A. An Outbreak of Food Poisoning Resulting from Eating Contaminated Raw Oysters. *Texas Reports on Biology and Medicine*, 2:251–258, 1944.
2. Pasquier, J. P. A. Essai Medical sur les Huitres. Collection des Theses soutennues a la Faculte de Medicine de Paris. *Tome Huitieme*. No. 231, VIII, Paris, 1818, 49 pp. (From Galtsoff, Ref. 18.)
3. Johnston-Travis, H. J. The Possible Conveyance of Certain Water-Borne Diseases Especially Typhoid Fever, by Oysters and other Molluscs. The Relationship of Oysters to Typhoid Fever and Gastro-Enteritis. *Brit. M. J.* 559–560 (Mar.), 1895.
4. Newsholme, A. The Spread of Enteric Fever and other Forms of Illness by Sewage Polluted Shellfish. *Brit. M. J.* 295–297 (Aug.), 1903.
5. Conn, J. W. The "Oyster Epidemic" of Typhoid Fever at Wesleyan University. *Med. Rec.* 46:743–746, 1894.
6. Broadbent, W. A Note on the Transmission of the Infection of Typhoid Fever. *Brit. M. J.* Jan., 1895, p. 61.
7. Thresh, J. C., and Wood, F. L. Report on an Outbreak of Typhoid Fever and other Illness Due to Oysters. *Lancet* Dec., 1902, pp. 1567–1570.
8. Marvel, P. On the Occurrence of Typhoid Fever in Atlantic City. New Jersey Board of Health *Ann. Rep.*, 26:80–81, 1902.
9. Atlantic City Academy of Medicine. Report on Typhoid Fever at Atlantic City. *Philadelphia M. J.*, 10:634–635, 1902.
10. Brooks, P. B. An Outbreak of Typhoid Attributed to Infected Oysters. *J.A.M.A.*, 66:1445–1447, 1916.
11. Bundesen, H. N. Typhoid Epidemic in Chicago Apparently Due to Oysters. *J.A.M.A.*, 84:641–650, 1925.
12. Harris, I. H. Typhoid Fever. Features of Public Health Interest of the Recent Outbreak of Typhoid Fever. New York City Department of Health, *Month. Bull.*, 15:18–63, 1925.
13. Fuller, C. A. Oysters and Sewage in Narragansett Bay. *Science*, 15:363–364, 1902.
14. Johnstone, J. Routine Methods of Shellfish Examination With Reference to Sewage Pollution. *J. Hyg.*, 9:412–440, 1909.
15. Gorham, F. P. Seasonal Variation in the Bacterial Content of Oysters. *A.J.P.H.*, 2:24–27, 1912.
16. Joseph, M. Bacteriological Findings in Baltimore Oysters. *Johns Hopkins Bull.*, 25:128–131, 1914.
17. Gage, S. D., and Gorham, F. P. Self-Purification of Oysters During Hibernation. *A.J.P.H.*, 15: 1057–1061, 1925.
18. Galtsoff, P. S. Experimental Study of the Function of the Oyster Gills and its Bearing on the Problems of Oyster Culture and Sanitary Control of the Oyster Industry. *Bull. Bureau of Fisheries*, 64: *Doc. No. 1035*, 1928.
19. Cumming, H. S. Investigation of the Pollution and Sanitary Conditions of the Potomac Watershed with Special Reference to Self-Purification and Sanitary Condition of Shellfish in the Lower Potomac River. U. S. Public Health Service, Hygienic Laboratory *Bull. No. 104*, 1916, 239 pp.
20. Hopkins, A. E. Factors Influencing the Spawning and Setting of Oysters in Galveston Bay, Texas. *Bull. Bureau of Fisheries*. 47, 3:57–83, 1931.
21. Gunter, G. Seasonal Conditions of Texas Oysters. *Proc. & Trans. Texas Acad. Sci.*, 25:89–93, 1942.
22. Galtsoff, P. S. Survey of Oyster Bottoms, in Texas. Bureau of Fisheries, *Investigational Report*, 1, 6:25–27, 1931.
23. American Public Health Association. *Standard Methods for the Examination of Water and Sewage*, 8th ed., New York, 1936.
24. American Public Health Association. Recommended Methods and Procedures for Bacteriological Examination of Shellfish and Shellfish Waters. *A.J.P.H.*, 33:582–591, 1943.

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Modified Self-Selection Method of Feeding Preschool Children in the Home*

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THERE are two problems in nutrition which confront the housewife and mother: (1) The adaptation to the home of the modern knowledge of nutritional requirements, and (2) the proper handling of children so that they will take adequate diets. Psychologists have pointed the way to avoiding feeding difficulties, but the practical application of their principles in the home has not been extensively studied or reported upon except for infants.

One basic approach to these problems is the use of free choice in all that pertains to eating. Richter [1] has demonstrated in animals with a specific deficiency the marked ability to select the food factor needed. Davis [2, 3] has shown that both infants and children in hospitals maintain excellent health and develop no feeding problems when allowed to choose their own meals. These experiments involved offering a wide variety of foodstuffs, the use primarily of natural foods, and the avoidance of any psychological barriers to the enjoyment of meals.

A similar freedom in eating is recommended by many pediatricians for the home.[4] For infants this method has received wide attention and acceptance.[5–7] Babies on a self-demand schedule grow normally and quickly form regular habits. A choice of formulas need not be offered since infants show no marked preferences.[8] This regime offers few difficulties for the parents.

Free choice for preschool children at home has not received the same study and presents certain problems.

1. The preparation of meals at irregular hours or of a wide variety of foods for each meal is seldom possible.
2. The extensive use of highly demineralized and devitaminized foods, especially sugar and white flour products, probably limits the freedom of choice which one can safely allow. In some homes it may even be impossible for self-selection to result in an adequate diet. Moreover, even when the home diet is good, children are over-stimulated to take the above foods because in our civilization they are for sale on every street corner.
3. It is more difficult for a parent than for a supervisor in an institutional experiment to avoid concern over what and how a child eats.
4. Finally, the example set by parents at meals is important.

The experiences reported here took place in a home where both parents are physicians. The two girls are at present 6 and 4 years old. The elder, F., was about 18 months of age when the free-choice method of feeding was undertaken. As an infant she had not been kept to a rigid schedule or forced to eat. On the other hand, desire to eat had not been given prime importance in planning her schedule. Furthermore, this parent worried considerably over food intake. Games and tricks were tried to encourage her to eat, but without success. She seemed to be con-

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suming very little and was taking an hour for a meal when the change in parental attitude began. Despite the fact that both parents accepted the logic of the new regime to which they had given some study, there was a certain amount of emotional difficulty in changing to a policy of *laissez faire*.

The younger child, S., was allowed from birth to choose the time for her feedings, the quantity, and later the type of food she desired. She always had a good appetite. By 15 months of age she was feeding herself without help. She was able to use a spoon correctly and took a large part of her liquids from a cup.

MODIFIED SELF-SELECTION METHOD

When F. was 18 months of age the following method of feeding was begun and has continued to date. S. was put on the same regime when she reached 15 months. At the time of starting, both children were eating without help from an adult.

Three meals a day are prepared at regular hours unless the children ask to eat early and it is convenient for them to do so. They are usually fed by themselves in the kitchen before the parents eat. The table is set attractively. Only small portions of each food are put on their plates. The mother remains with them giving her attention to other work, but ready to help them if they ask for it.

The children are allowed almost complete freedom in what they eat and how they eat it. They may ask for food not on the table or take nothing at all. When they ask for something which is not convenient to prepare or which is not in the house, they are promised the food at the earliest possible date. They are allowed any quantity of the foods available (with the exceptions noted below), any variety, and all the time they want for eating. They may eat with their fingers, drink from a bowl, sing. They may play while eating, play with the food, or take it outdoors to eat. They do for themselves as much as they wish.

The adult present makes no comments and shows no concern over the foods chosen or the quantity eaten. Accidents are cleaned up calmly and the child often helps. The children are advised not to take or ask for more food then they feel they can eat. Table manners are not mentioned until the child shows an interest in the matter.

In addition to three meals daily there are always available certain ready-to-eat and non-messy foods that the child can get at any time of day. Also the parent, if not busy, gets any easily prepared food when the child asks for it.

There are some rules for behavior and these are enforced: (1) Only certain places are used for eating. (2) Food is not to be thrown about or wantonly made unfit to eat. (3) The children are not to annoy their parents when the latter are eating.

The meals consist of simple foods easily prepared. For breakfast, eggs in various styles, any of some dozen cereals, and several fruits are offered. Lunch and supper are much alike. Besides numerous fruits and vegetables (usually raw), there is a choice of at least two meats. As a rule only one meat requires cooking, the other being served cold from a previously used roast, ham, or fowl. Milk and bread are offered for each meal, and another concentrated carbohydrate besides the bread. A limited amount of one of the foods commonly called "dessert" is set out with the rest of the meal or when requested. Dishes requiring long preparation are rarely used. The usual meal is prepared and consumed in 20–40 minutes. Exceptions occur when oven-cooked foods are served or a food jag appears. In the latter case repeated orders have to be filled.

In the early months a fairly wide variety of choices was served, but after the children learned to talk well, it be-

TABLE 1

Typical meals from various days showing the foods offered and the amounts eaten by each child. The foods offered include only those actually set out or suggested by adult

Foods Offered		*Foods Eaten*
Breakfast	*S. Age 2*	*F. Age 3½*
Milk	6 oz.	0
Eggs	½ omelet	1¼, soft boiled
Cereals, dry	0	½ shredded wheat in egg
Bread, whole wheat with oleo	½ slice toasted	¼ slice, toasted
Oranges	2 sliced	¼ peeled
Apples	0	0
Prunes, dry	0	0
Lunch	*S.*	*F.*
Milk	4 oz.	9 oz.
Chicken (cold)	2 slices white	3 second joints
Hamburger	2 small	0
Bread with oleo	1 slice	0
Sweet Potato, baked	½ small	1 small
Carrots, raw	½ medium	0
Peas, raw	0	1 teaspoon
Bananas	½	1
Pears	0	0
Candy, homemade, small	0	1
		½ shredded wheat with evaporated milk and brown sugar (requested)
Supper	*S.*	*F.*
Milk	4 oz.	0
Lamb chops	0	1 small
Liver, left over	Bite	0
Brown rice	0	3 bowls with evaporated milk and brown sugar
Waffle, whole wheat, cold	1 with cream and brown sugar	0
String beans, cooked	0	3 whole
Artichoke, cooked, cold	10 leaves	0
Grapes	12	0
Orange juice	1 oz.	0
Cookie, homemade, small	0	½

TABLE 2

Complete Eating Schedule for a Day

S. Age 3½

Breakfast	Milk, 9 oz.
7:20–7:40 A.M. at kitchen table	Whole wheat bread, 1 slice with butter and apple butter
	Orange juice, 9 oz. (unsweetened, canned)
9:00 A.M. in kitchen	Apple, asked to have it cut
9:30 A.M. in kitchen	Milk, 6 oz., helped self
11:00 A.M. taken outdoors	Peanuts, 2 handfuls, helped self
11:30 A.M. taken outdoors	Carrots, 2 raw, helped self
Lunch	
12:00–12:15 P.M. at kitchen table	Milk, 4 oz.
	Bacon, 3 strips
	Whole wheat bread, 1 slice with butter and apple butter
	1 small homemade candy
3:P.M. in kitchen	6 oz. orange juice, helped self
4:00 P.M. in back yard	Potato chips, 3 cups, helped self
5:30 P.M. in back yard	Cucumber, ½, helped self
Supper	
6:00–6:25 P.M. at kitchen table	Milk, 10 oz.
	Steak, 1" x 1" x 1"
	Salmon, 2 tablespoons (canned, opened for cat)
	Celery, ½ stalk
	Okra, 2 whole, raw
	Ice Cream, homemade, 2 tablespoons
8:00 P.M.	Apple juice, 6 oz. helped self

came possible to display less and to ask what they wanted from the foods available. They are not pressed for a decision and some variety on the table is found to stimulate their interest.

The foods offered the children are for the most part natural products, and an effort is made to help them like this type of diet by having such foods easily available at all times. For example, various kinds of fresh fruit are always in a bowl on their table. Some raw vegetables are kept in the refrigerator where they can be reached when wanted. These may include carrots, celery, cabbage, cucumbers, lettuce, string beans, green peppers, turnips, cauliflower, okra, and peas. Only artichokes, beets and corn are routinely cooked. The provision of a wide variety is easy under these conditions and there is the added advantage of preserving minerals and vitamins.

The devitalized foods, especially sweets and articles made of white flour, are avoided as much as possible. Whole grain products including brown rice are used almost entirely. Muffins, pancakes, gravies, etc., are made with whole wheat flour. Honey and syrups are always on hand. These, along with brown sugar, are used in cooking and on unsweetened cereals. Fancy baked goods and desserts are rarely bought or made. The same is true for jams, jellies, and soft drinks. A favorite hot weather drink is "sweetnin' water" which is cane syrup in water.

Only occasionally has it been found necessary to restrict the quantity chosen by the children from products containing white flour. On the other hand, sweets except for honey and syrups, have always been limited to a very definite amount. None are allowed between meals. At lunch and supper there is usually a choice of one cookie, a small piece of candy or ice cream, all of which are homemade. This restriction on sweets is the only curb imposed on free choice other than that made by the type of food habitually bought for the home.

The above regime offers the children the opportunity to take a good diet. The parents are fortunately able to set a good example. They enjoy all foods

TABLE 3

Complete Eating Schedule for One Day

F. Age 6

Breakfast	
7:30–7:45 A.M. at kitchen table	Powdered milk, 1 bowl with water (equal to 1 pint whole milk) Egg, ½, scrambled Cereal, cooked Ralston, 3 bowls with cream and brown sugar Bread, whole wheat, 1 slice, with butter Grapefruit, ½
(Nothing between breakfast and lunch)	
Lunch	
12:00–12:20 at table	Milk, 4 oz. Hamburger, 1 medium Bread, whole wheat, 1 slice, with butter Cheerioats—2 handfuls Carrot—1 medium Candy—1 small
4:30 P.M. outdoors	Watermelon, 1 slice, requested help Raisins, 1 handful, helped self
Supper	
6:00–6:20 P.M. at table	Milk, 5 oz. Ham, 2 slices Waffles, 3, with syrup and cream Okra, 1, raw Corn, ½ ear, cooked Peach, 1, fresh Ice cream, homemade, 1 scoop

and rarely have desserts. It took very little effort for them to like the type of diet desired for the children.

Table 1 gives typical menus with the foods eaten by each child. Tables 2 and 3 show complete eating schedules for one day.

RESULTS

Both children have good appetites and enjoy eating. They are self-reliant and usually eager to help prepare their food by pouring milk, squeezing oranges, scraping carrots, slicing cheese, and putting the scraps in the garbage pail. Between meals they customarily help themselves without bothering an adult. There is very little fussing over the limitation on sweets. Weeks and months go by without any request for extra amounts of these foods.

Table behavior has been unconventional in many respects, but not objectionable. Also the conduct of the children has consistently become more civilized as they grow older. Meals are pleasant occasions. The children usually eat quickly with little dawdling. Occasionally, in the early years, a meal lasted an hour. Jumping up from the table is still common. Playing with the food is usually confined to afternoon "tea parties." There has always been a minimum of messiness and spilling. Such things as eating with fingers and licking the plate are now infrequent. At about 5 years of age F. became increasingly interested in adult table manners and at present takes great pride when away from home in being polite and in eating all that is set before her without comment. This was done on her own initiative. She is now ready to eat with the rest of the family when she wishes to do so.

The foods chosen by the children show wide variation in type and quantity from day to day, and week to week. For this reason, in order to estimate the composition of their diet, a record was kept of everything eaten and the approximate amounts in household measures over a period of 6 weeks during one winter. F. was 3½ and S. almost 2 years old at the time.

The average daily intake from various food groups during this 6 week period

TABLE 4

Approximate Average Daily Intake

Food Groups	*Measure*	*F. Age 3½*	*S. Age 2*	*Recommended by National Food Guide*
1. Milk (Cheese, ice cream)	Cup (8 oz.)	2.4	2.1	3–4
2. Meat, fish, fowl (Legumes, nuts)	* Servings	1.1	1.7	1–2
3. Eggs	No.	0.8	0.4	4 a week
4. Vegetables Green or Yellow	* Serving	1.2	1.0	1 or more
5. Citrus fruit (Other foods high in vitamin C)	* Serving	3.2	3.0	1 or more
6. Other fruits and Vegetables	* Serving	2.1	2.6	2 or more
7. † Bread or Cereals Whole grain or enriched products	Slices or Bowls	2.5	1.9	Some
8. Butter or Oleo	Pats (10 gm.)	1.0	0.9	Some

* Servings:
Meat —2 oz.
Vegetables—1 med. carrot; ½ head broccoli; ½ cucumber, ¼ head lettuce, 1 small potato, 2 heaping tablespoons cooked vegetables, etc.
Fruit —1 med. orange, pear, peach, banana or apple, 4 oz. fruit juice, 5 figs or prunes, 20 raisins or grapes, etc.

† Includes pancakes, waffles, muffins, brown rice, popcorn.

is shown for each child in Table 4. The food groups have been arranged to conform with the *Basic 7* of the *National Food Guide*,[9] except that eggs have been taken from the meat group to form an eighth group. The final column shows the recommendations of the *National Food Guide*.

It is seen that both children had an average daily intake of over a pint of milk, more than one serving from the meat group, about half an egg, one serving of green or yellow vegetables, several servings of citrus fruit, two other fruits or vegetables, two servings of a grain product and about a pat of butter or oleo. Not recorded under the milk group was a very small amount of cheese and ice cream. Not recorded under the meat group was a moderate amount of nuts and peanut butter taken by the older child. Almost all of the fruits and vegetables were raw and fresh. All of the bread and over half of the cereals were of the whole grain variety, the rest fortified.

Beside the *Basic 7*, the *National Food Guide* lists certain foods which are chiefly energy giving, and not shown in Table 4. From this group both children took a daily average of about one-half strip of bacon and one teaspoonful of syrup or brown sugar. The older child also had approximately one small cookie and one-third of a piece of candy. Finally, both children received 400 I.U. of vitamin D supplement daily. They were both sun-tanned at this time as they have been the year round since 3 weeks of age—one advantage of living in the South.

The diets taken by the children are entirely satisfactory in comparison with the recommendations of the *National Food Guide* except for milk intake. In this case the 3 to 4 cups suggested as standard is a general allowance for all ages of children, but good authority exists for believing that there is an exception in the early preschool years when a pint is considered sufficient.[10, 11] There was some added milk in cooked foods taken by these children, and there are times when they drink considerably more than in the particular 6 week period recorded. For the past 6 months, they have both been taking about 1 quart daily.

The average daily intake of the children does not differ materially from diets for preschool children prepared by Butler [12] and Dann.[13] These diets are more specific than that of the *National Food Guide* and are designed to meet the daily allowances for various nutrients recommended by the Committee on Food and Nutrition of the National Research Council.[14]

The daily intake as tabulated supplied 1,200–1,500 calories. It was high in protein and low in carbohydrate when compared to the usual American diet. The vitamins were abundant.

In addition to taking an adequate diet the children present certain eating habits which are of interest. About one-third of the food is taken between meals but this consists for the most part in fruits, vegteables, and milk. One meal daily is usually much larger than the others but which meal is hearty varies from time to time. The quantity taken on some days may be several times greater than that taken on other days. An enormous appetite may last for weeks to be followed by a sharply reduced intake for no apparent reason.

The children prefer each food by itself and dislike such mixtures as stews, hash, and fancy salads. Even salt is often taken alone especially in hot weather. They have developed a taste for raw foods and whole grain products. There is a large amount of roughage in their diets, but it does not seem to upset them. An occasional loose stool or the presence of undigested food particles in the stool has never been followed by diarrhea. They preferred the "dessert" in the middle of the meal until recently

when they started taking it at the end.

The children tend to limit the variety at any one meal and concentrate on 2 or 3 foods, although this tendency has become less marked as they grow older. The extension of this tendency, the so-called "food jag," is very common, and it may last for days or weeks. There have been jags on almost every well-liked food including numerous fruits and vegetables. On various occasions a meal has consisted of a large amount of a single item, e.g.: 6 eggs, 3 cucumbers, 6 chicken legs, 2 large cans of evaporated milk, 7 bananas, or 8 slices of bread. One child asked for shredded wheat at every meal for several weeks. Watermelon season has been celebrated by having watermelon 6 to 7 times daily for a week. No gastrointestinal upset ever resulted from these jags. In spite of the tendency to concentrate, very few days have passed without there being some choice made from every food group. Especially milk and citrus fruit are rarely skipped entirely. At present about one-half or more of the individual meals are well "balanced." Each child consistently favors certain foods, e.g., one is partial to meats and fruits, the other to eggs and cereals.

The children are not omnivorous eaters, but they take a wide variety of foods which is increasing all the time. They like all fruits; almost all kinds of meat, fish, fowl, cereal; about 15 vegetables. For some reason they have never liked white potatoes except as chips, or cooked greens of any kind. It is interesting to note that even their favorite dishes are refused at times.

Both children have grown and developed normally and show no tooth decay. One is unusually tall, both have always been slender but firm and strong. Table 5 shows the height and weight records. Their growth curves are within normal levels.[15]

TABLE 5

	Weight—Lbs.-Ozs.		Height—Inches	
Age—Yrs.	F.	S.	F.	S.
Birth	7–3	6–3	20.0	20.0
1	19–5	18–4	30.5	29.5
2	25–0	23–12	36.3	33.7
3	32–0	28–0	40.0	36.7
4	37–8	32–0	43.0	39.0
5	42–0		45.5	
6	46–0		47.7	

Both children have had occasional upper respiratory infections after 1 year of age, but no serious illness. There have been very few and very minor digestive disturbances. Neither child has ever taken or needed a laxative or enema.

DISCUSSION

The success of this method of feeding children presupposes a fundamentally happy home without undue emotional tensions in fields other than eating. It would seem that these tensions may well upset the appetite even when the feeding method itself is sound.

It cannot be assumed that this method will necessarily be successful with a child who has already acquired faulty eating habits. Cure is more difficult than prevention and cannot be discussed here.

The satisfactory operation of the regime obviously depends on the attitude of the parents. It has not been easy to overcome worry and anxiety about what the children eat. Nor has it been easy to avoid showing annoyance at unconventional behavior and food jags. It is also clear that the example of the parents in eating and liking a simple diet and eschewing too highly processed foods is of basic importance.

The program can certainly be carried out more conveniently and happily when the children eat by themselves. Observations at the homes of friends have demonstrated the ease with which parents become short tempered when small children eat at the same table with grownups.

The diet as outlined may involve extra expense for the home, but there is no reason why the same method cannot be attempted with careful planning

on any budget. Raw foods have many advantages but they are not necessary to the success of the regime. It may be thought undesirable to have so much food consumed between meals, but it is believed that the children in this record would not have taken so many fruits and vegetables if they could be eaten only with meals. The older girl, since starting kindergarten and school, obtains less between meals without complaining. One big problem comes in avoiding the excessive consumption of sweets away from home and on special celebrations. This difficulty the parents have to manage to the best of their ability with ingenuity and forethought.

SUMMARY

A modified method of free choice in eating is possible for preschool children in the home without undue effort or expense. The 2 children in this record are healthy and happy. They take an adequate diet and are developing conventional eating habits in their own time.

REFERENCES

1. Richter, C. P. Total Self Regulatory Functions in Animals and Human Beings. Harvey Lecture Series XXXVIII, 1942–1943, pp. 63–103.

2. Davis, C. M. Self Selection of Diet by Newly Weaned Infants. *Am. J. Dis. Child*, 36:651 (Oct.), 1928.

3. Davis, C. M. Practical Application of Some Lessons in the Self-Selection of Diet Study to the Feeding of Children in Hospitals. *Am. J. Dis. Child*, 46:743 (Oct.), 1933.

4. Sweet, C. Voluntary Food Habits of Normal Children. *J.A.M.A.*, 107:765 (Sept.), 1936.

5. Gesell, A., and Ilg, F. *Feeding Behavior of Infants*. Philadelphia: Lippincott, 1937.

6. Simsarian, F. P., and McLendon, P. A.
   a. Feeding Behavior of Infant in the First 12 Weeks of Life on Self-Demand Schedule. *J. Pediat.* 20:93 (Jan.), 1942.
   b. Further Records of Self-Demand Schedule in Infant Feeding. *J. Pediat.* 27:109 (Aug.), 1945.

7. Aldrich, C. A. Ancient Processes in a Scientific Age. *Am. J. Dis. Child*, 64:714 (Oct.), 1942.

8. Davis, C. M. Choice of Formulas Made by 3 Infants Throughout the Nursing Period. *Am. J. Dis. Child.*, 50:385 (Aug.), 1935.

9. *National Food Guide*, U. S. Department of Agriculture A 15–53. Issued by Bureau of Human Nutrition and Home Economics.

10. Jeans, P. C. The Feeding of Healthy Infants and Children. *J.A.M.A.*, 120:913 (Nov.), 1942.

11. Daniels, A. L., *et al.* Calcium and Phosphorus Needs of Preschool Children. *J. Nutrition*, 10:373 (Oct.), 1935.

12. Butler, A. M. Nutritional Requirements in Infancy and Childhood. *Am. J. Dis. Child.*, 64:898 (Nov.), 1942.

13. Dann, W. J., and Davidson, W. C. Nutritional Requirements of Childhood. *Am. J. Dis. Child.*, 63: 366 (Feb.), 1942.

14. Recommended Daily Allowances for Specific Nutrients (Committee on Food and Nutrition of National Research Council). *J.A.M.A.*, 116:2601 (June), 1941.

15. Sontag, L. W., and Reynolds, E. L. A Practical Method for Analyzing Growth Progress. *J. Pediat.* 26:327 (Apr.), 1945.

BCG Vaccination in New York State

The New York State Department of Health and the Medical Society of the State of New York have recently published a *Program and Guide for Physicians on BCG Vaccination*. The brochure discusses the administrative aspect, the recommendations for use in selecting groups to receive the vaccine, the participation in the program by local agencies, the distribution in the state of the vaccine, the recommended procedures, and a technical guide for physicians.

At the present time BCG vaccine manufactured by the State Department of Health is distributed on request to local full-time health departments, to medical colleges and teaching hospitals, to superintendents of public tuberculosis hospitals, and directors of tuberculosis clinics, and to certain additional institutions who train physicians who have been designated by the State Commissioner of Health to administer BCG vaccine.

Of the methods for vaccination, the multiple puncture method is set forth first, with descriptions of Birkhaug's and Rosenthal's techniques. Also described are the scarification and intracutaneous methods.

Nutrition Appraisals in Mexico*

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DURING the years 1942–1945 inclusive, a series of nutrition appraisals were carried out in selected population groups in several areas on the high central plateau of Mexico under the coöperative auspices of the Mexican Ministry of Health and the International Health Division of The Rockefeller Foundation.† Although the results of these investigations have been reported,[1–4] it seems worth while to summarize them briefly here and to present certain additional data [5, 6] so that a more comprehensive picture of the nutritional status and food habits of the Mexican people may be available.

The work already reported included a study of the nutritional conditions of the residents of the crowded Santa Julia section of Mexico City (altitude approximately 7,500 ft.), occupied by economically poor wage earners [1]; a special study of a group of women in this area during pregnancy and after delivery [3]; an appraisal of the condition of a number of economically poor families before and after they were fed for periods of 8 to 16 months at a government operated dining room (comedor) in Mexico City [2]; and a study of the dietary habits and the nutrition of Otomi Indians in four villages in the Mezquital Valley about 75 miles north of Mexico City (altitude approximately 6,500 ft.), unquestionably one of the poorest areas of the country.

In addition, observations have been made in the small village of Yustes in the Bajío area of the State of Guanajuato (altitude approximately 6,000 ft.),[5] and in the village of Capula, near Lake Patzcuaro, in the State of Michoacan (altitude about 6,200 ft.).[6] Yustes lies in one of the country's richest agricultural regions, formerly occupied by large haciendas which are now divided and turned over to the villages as communal lands and parcelled out among the families for cultivation. Most of the families have enough land to produce food for their own needs and to furnish cash incomes to provide for other necessities of living. The residents of this village, alone among the groups studied, were probably not restricted as to caloric intake because of poverty. They are chiefly of Otomi Indian ancestry but have some admixture of white blood. The inhabitants of Capula are predominantly Tarascan Indians, although they no longer use their native tongue and many have abandoned their native customs. They engage in agriculture, pottery making, and charcoal production. Economically they are somewhat poorer than the Yustes families but are better off than the other groups studied.

* The studies and observations on which this report is based were conducted under the auspices and with the support of the International Health Division of The Rockefeller Foundation in coöperation with the Ministry of Public Health and Welfare of Mexico, and its subdivisions—the National Institute of Nutrition and the School of Hygiene.

† Studies made under the auspices of the Pan American Sanitary Bureau, the Department of Nutritional Biochemistry of the Massachusetts Institute of Technology (supported by the Kellogg Foundation), the Mexican Ministry of Health and Welfare, and the International Health Division of The Rockefeller Foundation, supplied information for an evaluation of nutrients in Mexican foods.

PROCEDURES

The family was the unit of investigation in every study. Individual diet records, usually for a 7 day period, were compiled for each member of the families participating in a study. A medical history was obtained for each individual, and each was examined for signs or symptoms of deficiency diseases. The slit lamp and biomicroscope were used for examination of the cornea, bulbar conjunctiva, gums and tongue. From each person over 2 years of age approximately 20 ml. of blood was withdrawn for laboratory examination. Four ml. of each sample was oxalated with a mixture of dried potassium and ammonium oxalate[8] and used for the hematologic examination, including hemoglobin[9] and hematocrit[8] determinations and red cell count. The remainder of the sample was used for determining the total serum proteins and albumin by the quantitative biuret method,[10] the serum carotene and vitamin A,[11] and the ascorbic acid.[12] For children between 2 and 5 years of age alkaline serum phosphatase was also determined.[13] In areas where malaria and intestinal parasite infections were prevalent, blood smears were examined for the presence of plasmodia and stool examinations were made. Such examinations were also made in other areas in special cases.

Diet Records—Each family in a study area was visited daily for one week, usually at the time the main meal was being prepared. The composition of the meal was recorded, and the weights and volumes of the foodstuffs used were determined by means of a beam balance and measures. The record of all food consumed by individual members of the family each day was kept on the basis of household measures or in terms of portions of the various dishes eaten by each person. In so far as possible, foods eaten away from home were also recorded.

On the day of the first visit to a family an inventory of the food in the house was taken, and a record was kept of that acquired during the week. Waste was accounted for as far as possible. At the end of the week a second inventory of food was taken. These inventories, together with the record of food purchased or acquired were compared with the amount consumed so that discrepancies might be detected. From the record of food consumed by each individual the average daily intake of calories, animal and total protein, carbohydrates, fat, vitamin A, thiamine, riboflavin, niacin, ascorbic acid, calcium, phosphorus and iron was calculated.

The food tables used in the study of the Santa Julia area were compiled chiefly from the English literature since at the time of that study no analysis of specifically Mexican foods for vitamin and mineral content had been made. Tables used in later studies were based chiefly on analyses of foods collected in Mexico during the time of these studies, many of them from the regions being surveyed.[7] Although the number of samples was limited, the error was probably less than when calculations were based on data on foreign foods.

No corrections for cooking losses were made. Tortillas, the outstanding constituent in the Mexican diet, were analyzed as prepared for eating. Chili peppers, both dried and green, are commonly ground and eaten without cooking. Most fruits are eaten raw. Where greens are used they are usually not cooked excessively. Beans are frequently boiled for long periods and often fried after boiling. Under these circumstances it seemed inadvisable to assign an arbitrary figure for loss of nutrients in cooking.

FOOD HABITS

The Mexican diet is basically that of

the aboriginal Indian, influenced to a greater or less extent by the Spanish and succeeding immigrations, and by family economic status. Tortillas, which are made of corn, furnish for some families from 75 to 80 per cent of the total calories consumed; in the quantities eaten they are important sources of protein, carbohydrate, fat, thiamine, niacin, calcium, phosphorus and iron. Corn is also used in the form of "atole," a beverage; in "posole," a soup; and in tamales. In the cities, wheat is tending to supplant corn as a basic cereal. Beans of many varieties are eaten, occupying much the same place that potatoes do in many North American diets. Chick peas (garabonzos) serve both as an animal and a human food in certain regions.

Meat is eaten by families at higher income levels, but the Mexican diet as a whole is poor in animal proteins. Except on certain large ranches, few cattle or poultry are raised, and the meat produced is usually sold to buy foods of higher caloric value in relation to cost. Milk is consumed by persons in the higher income groups of the larger towns, chiefly through the practice of drinking "cafe con leche," a mixture of half or more milk with coffee, usually at the evening meal. Among less favored groups in rural areas, milk plays an insignificant role in the diet.

Although the fruits of Mexico are varied, palatable, and nutritious, they are frequently neglected in the diet. In some arid regions the flowers, fruits, and leaves of certain cacti are important sources of nutrients, particularly vitamin C. Pulque, a weakly alcoholic drink (3 to 5 per cent) prepared from the juice of the century plants growing on the high central plateau, provides good amounts of vitamin C and other vitamins when drunk in large quantities. While the beneficial effects of pulque may be questioned, it would be unwise to discourage its consumption in marginal areas unless more desirable sources of these vitamins can be substituted.[4]

Most of the vegetables common in the United States, as well as others, are available in Mexico, but individual consumption is low among the poorer groups. Truck gardening usually centers about large cities; in rural areas there is little home gardening. Wild plants, many of them nutritious, are consumed by persons of low income.[4] Chile peppers, which are rich in vitamins, are widely eaten.

The chief meal of the day is usually eaten in the early or middle afternoon. Among the higher income families it includes several courses and a variety of meats, fruits, and vegetables. Among poorer families it usually consists of a beverage or soup, tortillas, beans, and perhaps a little meat or some vegetable, heavily seasoned with chili peppers. On weekly market days, on the many fiesta days, and on Sundays, larger amounts of meats, fruits, and vegetables, plus alcoholic beverages, may be consumed at this meal.

INTAKE OF NUTRIENTS

Table 1 contains the calculated average daily intake of calories, proteins, vitamins, and minerals per person in the various groups studied. These averages are compared in each instance with the National Research Council's recommended allowance for moderate activity, corrected for the age and sex distribution of the persons included in each survey. The recommended averages as corrected for these factors are low for the "comedor" families because of the large percentage of children in this group.[2]

Except in one group, the caloric intakes were below the recommended allowances, but they were not so low as those reported for several groups studied in the United States.[14-16] They varied directly with the economic status

TABLE 1

Average Daily Intake of Nutrients

Group	*Santa Julia, Mexico City,* Altitude 7,500 ft.*	*"Comedor," Mexico City*	*Otomi Indians, Mezquital Valley*	*Yustes, "Bajio" Area, Guanajuato*	*Capula, Lake Patzcuaro, Michoacan*
Number of diets	540	413	856	151	137
Average calories	2,251	1,679	1,706	2,528	2,032
N.R.C. recommendation	2,458	2,240	2,430	2,438	2,447
Per cent of recommended	92	75	70	104	83
Total cal./basal cal.	1.78	1.50	1.53	2.05	1.75
Total protein (gm.)	78.0	55.5	51.0	75.1	59.0
N.R.C. recommendation	66.4	62.4	64.0	65.1	67.8
Per cent of recommended	117	89	80	115	87
Per cent of animal protein	33	18	4.8	7	13
Vitamin A (I.U.)	3,675	2,583	5,498	3,431	2,022
N.R.C. recommendation	4,532	3,929	4,331	4,182	4,493
Per cent of recommended	81	66	127	82	45
Vitamin C (mg.)	42.0	22.2	96.3	27.8	16.0
N.R.C. recommendation	72.6	63.4	68.1	70.0	72.8
Per cent of recommended	58	35	141	40	22
Thiamine (mg.)	1.4	1.3	1.6	2.4	1.8
N.R.C. recommendation	1.2	1.1	1.2	1.3	1.2
Per cent of recommended	116	118	133	185	150
mg./calories/1,000	0.63	0.78	0.94	0.94	0.89
Riboflavin (mg.)	1.43	0.76	0.69	0.85	0.7
N.R.C. recommendation	1.72	1.51	1.66	1.83	1.71
Per cent of recommended	83	49	42	46	41
mg./calories/1,000	0.64	0.45	0.40	0.34	0.35
Niacin (mg.)	9.1	6.0	9.4	10.3	9.0
N.R.C. recommendation	13.1	11.1	11.9	13.4	12.0
Per cent of recommended	69	54	79	77	75
Iron (mg.)	16.5	11.4	23.2	24.2	19
N.R.C. recommendation	11.5	11.1	11.4	11.6	12.0
Per cent of recommended	144	103	203	208	158
Calcium (gm.)	1.73	0.59	0.82	1.14	0.9
N.R.C. recommendation	1.04	0.98	0.96	0.98	1.0
Per cent of recommended	167	60	85	116	90
Phosphorus (gm.)	1.15	0.93	1.1	1.86	1.5
Ca/P ratio	1.5	0.64	0.75	0.61	0.60

* The dietary calculations in this study, which were based chiefly on U. S. food tables, are not strictly comparable with the others for which values of Mexican foods were used. These Mexican values resulted in some rise in the calculated amounts of vitamins C and A, and some decrease in those for riboflavin, calcium, and phosphorus, with levels for the other nutrients remaining approximately the same.[2]

of the groups: the intake (2,528 calories) for the Yustes families, whose consumption was not limited by economic factors, slightly exceeded the recommended allowances for moderate activity. Although it may not be true that intakes as high as this promote optimum health, it was our impression that the individuals in this group had the best physiques.

In all groups the calories were derived chiefly from carbohydrates (65 to 75 per cent), with fat furnishing from 10 to 25 per cent and protein from 10 to 15 per cent. The average total protein intakes in all sections were good, with the lowest being 80 per cent of that recommended. The amount of animal protein consumed was small, however, and many persons ate no protein of this type during the week the diet record was kept. The main sources of protein were corn[17] and beans.

Vitamin A intakes varied from 45 to 127 per cent of the recommended amounts, and vitamin C intakes from 22 to 141 per cent of these amounts. Excellent intakes of both vitamins are recorded for the Otomi Indians of the

Mezquital Valley, whose extreme poverty forced them to eat plants not ordinarily consumed, many of which were found to have a high content of these vitamins.[4, 7] Furthermore, these Indians drink pulque in large amounts, thus adding to their vitamin C intake. In the other groups, chili peppers were probably the best single source of vitamins A and C.

Thiamine intakes were more than adequate for each of the population groups. Tortillas were by far the chief source, but inasmuch as the amount of this vitamin attributed to tortillas is based on the analysis of only a few samples, the values given may be somewhat inaccurate. Beans constituted the second most important source of thiamine.

Except in the Santa Julia group in Mexico City, the average intakes of riboflavin were less than 50 per cent of those recommended. Improvement in riboflavin intake is one of the most urgent nutritional needs in Mexico today. Milk, high in riboflavin content, is available only in small quantities, and an early increase in its production cannot be anticipated. Attempts to discover and to raise plants that will constitute new sources of this vitamin would therefore seem worth while. Tortillas, though not high in riboflavin, furnish the major proportion of this vitamin in the diets because of the large quantities consumed. Beans rank next in importance.

Niacin intakes varied from 50 to 80 per cent of those recommended and were derived largely from corn, i.e., tortillas. Some was obtained from beans and meat. Considering the level of the niacin intake and the high corn consumption, it is surprising, in view of the counteracting effect of corn on this vitamin, that more cases of severe niacin deficiency, including pellagra, were not encountered.[18] There are no data on the relation of tryptophane in the Mexican diet to the niacin requirement.[19] Because the consumption of meat and other animal protein is so low in many areas, these cannot be the major sources of tryptophane. Many beans, particularly of the black variety,[20] have a rather high content of this amino acid, but bean consumption was not great in some of the groups studied. Pulque may also contain this amino acid, but many persons take little or none of this beverage. Controlled studies on the factors in the Mexican diet which influence the niacin requirement are needed.

In all groups the average iron intakes were well above those recommended. Calcium and phosphorus intakes were fairly good and the calcium-phosphorus ratios were reasonably favorable. The chief source of both of these minerals was the tortilla. In view of the extremely small amount of milk available in Mexico, it is fortunate that the manner in which tortillas are prepared adds large quantities of calcium to the diet.[21]

No attempt was made in these studies to measure the vitamin D intakes. The average Mexican can, through exposure to intense solar radiation, acquire more than a sufficient amount of vitamin D. The use of fish liver oils or other vitamin concentrates was negligible.

RESULTS OF PHYSICAL EXAMINATIONS

The most conspicuous clinical signs of nutritional deficiency that we observed, not only in the areas where our intensive studies were made but in practically all the regions we visited, were cheilosis (angular stomatitis) and glossitis, which are usually attributed to absence of components of vitamin B-complex from the diet. The small amount of therapeutic testing that we did suggested that riboflavin deficiency was chiefly responsible for the angular stomatitis. Most cases of glossitis appeared to be of a chronic type and due to a mixed vitamin

B deficiency. The Mexican habit of eating large quantities of hot chili peppers may have contributed to the glossitis. Among the few persons to whom we gave test treatments for this condition some responded to riboflavin and some to niacin alone, but the most favorable response appeared to follow whole B-complex therapy. Skin changes such as dryness, scaling, induration, and "crackling" were common, but it was difficult to determine to what extent these might be due to poor personal or environmental hygiene and exposure to adverse climatic conditions.

We saw no pellagra in the groups studied, and Yucatan was the only region we visited in which it was an important endemic disease. Although we made no nutrition studies on hospitalized patients, we visited hospitals in Mexico rather frequently. Among patients in these institutions cases of severe nutritional deficiency, particularly those due to B-complex lack, including pellagra, appeared to be more common than in the United States.

The incidence of corneal vascularization was not high in the areas studied as compared with that observed in the United States,[1-4, 14, 29, 30] despite the low riboflavin content of the diets. We have had difficulty in correlating corneal vascularization either with riboflavin intake or with other signs suggestive of deficiency of this vitamin, and we question the specificity of this sign, particularly when it is mild in degree and not accompanied by other evidence of riboflavin lack.

No peripheral neuritis or other clinical entities definitely ascribable to thiamine lack were observed in the surveys, which was not surprising in view of the adequate intakes of this vitamin in the populations studied. Persons with vague subjective symptoms and mild degrees of calf tenderness were encountered, but these symptoms in themselves do not necessarily indicate thiamine deficiency.

We saw no definite clinical symptoms of vitamin A deficiency among the populations surveyed. Xerophthalmia is observed occasionally in infants in Mexican hospitals, but we encountered none in our studies. We saw no conjunctival spots which appeared to be true Bitot spots. Mild skin folliculosis was common and persons with well marked follicular hyperkeratosis were occasionally seen. We doubt, however, whether such signs are diagnostic of vitamin A deficiency in the absence of other evidence.

Slit lamp examination of the bulbar conjunctiva revealed a high incidence of changes sometimes attributed to vitamin A deficiency.[27] These changes appeared at an earlier age and were of a more severe grade than conjunctival changes seen in the groups studied in the United States. However, no direct correlation was demonstrated between blood serum levels or dietary intakes of vitamin A and these lesions,[28] either among individuals in the same group or between average values from group to group. In fact the Otomi Indians, with the highest intake of vitamin A and the best average blood level of this vitamin, exhibited the highest degrees of conjunctival changes.[4] These people also suffered most from exposure to intense sunlight, wind, and dust, which may have contributed to the membrane changes.

Gingivitis was prevalent in all areas studied, but no correlation could be demonstrated between vitamin C intakes or blood serum levels and this condition, either among individuals or groups. The Otomi Indians, with the worst gums we have ever seen, had the highest blood levels and the highest intakes of vitamin C of any group studied.[4] The role of other vitamin deficiencies in this disease, particularly deficiencies of the B-complex, needs further investigation, but we believe that the gingivitis which we encountered in

Mexico was primarily due to poor oral hygiene.

No cases of clinical rickets were observed in the surveys, which was to be expected in view of the intense solar radiation to which most Mexicans are exposed. However, occasional cases of rickets are seen in Mexico, particularly in hospitals. Mothers sometimes shield their young children entirely from the sun, believing that its rays are harmful to them.

The teeth of the average Mexican were found to be excellent. In some rural areas nearly 50 per cent of the adults had perfect teeth.[4, 5] Fluorosis is certainly a factor contributing to this condition in many regions, and severely mottled enamel is not uncommon. In other regions, however, the fluorine content of the water probably did not account for the excellent condition of the teeth.[4] It is believed by many that the amount of calcium consumed in tortillas may explain the phenomenon. Further studies, however, are desirable.

Underweight persons, as defined by the usual standards, were common in the groups studied, and the absence of obesity was conspicuous. It is well known that undernutrition, unless grossly unbalanced, may result in a retarded growth, thinning of body tissues, and lack of physical well-being rather than in specific signs of deficiency. Such effects of a poor nutrition would be most evident during the growing period. It should not be inferred, however, that the United States type of growth and physique would suit the Mexican better than his own. The average Mexican is probably less active than the average American, but he can, when necessary, carry heavy loads great distances and do work that few Americans would think of attempting.

Of particular interest among the physical findings not obviously related to nutrition was the rarity of hypertension in the groups studied and its lack of severity when present.

RESULTS OF BLOOD EXAMINATIONS

The average hemoglobin and average blood serum levels of vitamin A and vitamin C for each of the population groups studied are shown in Table 2 according to age groups. The hemoglobin averages are considerably above those found in surveys in the United States, undoubtedly chiefly because of the altitude of the Mexican communities, although the high iron intakes of the people also probably contribute to the satisfactory levels. Red cell counts and hematocrit values were omitted from the table because they were found to be in conformity with the hemoglobin averages. There was, however, a slightly high mean corpuscular volume which might be ascribed to the altitude or possibly to nutritional causes.[3, 22]

Of the two Mexico City groups studied, the persons participating in the "comedor" experiment showed significantly lower average hemoglobin levels, which may have been due partly to their poorer diets before they attended the government-operated dining room. Average hemoglobin levels for the other three population groups, all at similar altitudes, were virtually identical in spite of the fact that the areas were widely separated and inhabited by people of different racial characteristics and economic status.

Blood serum levels of vitamin C among children were good. The levels in general were somewhat higher than might have been expected from the intakes of this vitamin. This may be attributable in part to the small average size of the Mexican and to the fact that the records of intakes of vitamin C were incomplete because of the difficulty of obtaining accurate information as to the fruit and the drinks containing fruit juices which were consumed away from home between meals. Low levels of vitamin C were observed in pregnant

TABLE 2

Results of Blood Examinations

Group	*Santa Julia, Mexico City*	*"Comedor," Mexico City*	*Mezquital Valley*	*Yustes, Guanajuato*	*Capula, Michoacan*
Altitude of region	7,500 ft.	7,500 ft.	6,500 ft.	6,000 ft.	6,200 ft.
Number of individuals	534	481	852	183	163
Hemoglobin (gm./100 ml.)					
1- 9 yrs.	14.2	13.9	13.2	13.3	13.3
10-15 yrs.	15.1	14.8	14.2	13.7	14.6
16 yrs. and over (males)	16.9	16.6	15.5	15.5	15.8
16 yrs. and over (females)	15.0	14.1	13.8	13.3	13.5
Entire group	15.2	14.6	14.1	14.0	14.2
Serum ascorbic acid mg/100 ml.)					
1-15 yrs.	0.96	0.94	1.3	0.90	0.93
16 yrs. and over (males)	0.63	0.58	1.2	0.57	0.69
16 yrs. and over (females)	0.68	0.67	1.2	0.64	0.72
Entire group	0.83	0.81	1.2	0.72	0.80
Serum vitamin A(I.U./100 ml.)					
1- 9 yrs.	70	77	74	51	53
10-15 yrs.	87	82	89	65	70
16 yrs. and over (males)	127	106	117	82	94
16 yrs. and over (females)	97	86	104	73	75
Entire group	95	85	98	70	73

women.[3] The Otomi Indians had the highest ascorbic acid serum levels of all the groups studied.

Serum vitamin A values for most of the individuals in the areas surveyed, as well as for others for whom these values were determined in the same laboratory, approximated those commonly found in the United States. However, in the Yustes and Capula areas the average values, particularly among children, were lower than those usually encountered. The groups with the higher vitamin A intakes had the higher average serum levels. Few of the levels were in the range of those ordinarily associated with clinical vitamin A deficiency,[23] and no persons with classical symptoms of vitamin A deficiency were observed.

Since, from a clinical standpoint, vitamin B-complex deficiency was the main one encountered, it is unfortunate that no practical tests for its presence applicable to population groups have been developed. Under the best controlled conditions the value of excretion tests on urine may be questioned, and under survey conditions even single samples are sometimes difficult to obtain. However, in the hope that information of significance regarding a group as a whole might be obtained,[24] in the Yustes and Capula surveys riboflavin was determined in single samples of urine,[25] and in the Capula survey F_2 (methylnicotinamide) was also measured.[26]

Results of the riboflavin excretion tests in Yustes are summarized in Table 3. In view of the low riboflavin intakes recorded for this area (Table 1) and the prevalence of clinical signs of the lack of the vitamin, the low excretion levels were not unexpected. Sixty per cent of the values were below 0.3 mg. per liter, the minimum normal level suggested by Feder, *et al.*[24] Although there was a wide overlapping in values, the average excretions for persons with cheilosis were less than half those for the group as a whole. In spite of the errors involved in the use of single samples, the observation suggests that riboflavin deficiency is related to this clinical sign.

Of the group at Capula, for which F_2 determinations were performed, 8 per cent excreted no methylnicotinamide, and among pregnant and lactating women 17 per cent excreted none. Glossitis, which was probably partially due

TABLE 3

*Urinary Riboflavin Excretion **
Yustes, Guanajuato

Age →	1–9 Yrs.	10–15 Yrs.	16 and over (Male)	16 and over (Female)	Entire Group
Entire group					
No.	22	38	44	61	165
Mean	0.326	0.426	0.543	0.303	0.398
S.E.m	0.070	0.065	0.11	0.10	0.052
Group with angular stomatitis					
No.	8	4	3	6	21
Mean	0.208	0.204	0.233	0.121	0.186
S.E.m	..	..	..	..	0.023
Range	0.06–0.36	0.09–0.50	0.19–0.26	0.06–0.20	0.06–0.50
Range for persons without angular stomatitis	0.05–0.71	0.09–1.98	0.09–4.27	0.07–1.70	0.05–4.27

* Expressed in terms of milligrams per liter

to niacin deficiency, was common in this group, but the meaning of low or absent F_2 excretions in the urine is too obscure at present to warrant drawing conclusions.

Alkaline serum phosphatase determinations performed on children between 2 and 5 years of age rarely showed values above normal, and they showed none within ranges usually associated with severe clinical rickets.

Serum protein levels were adequate. In Mexico, as in the United States, we have been impressed with the fact that few low blood protein values attributable to poor nutrition were encountered in general population groups. Cases of edema were rare and when found could usually be ascribed to concurrent disease rather than to low blood proteins.

SUMMARY AND CONCLUSIONS

Studies of the nutritional status of several population groups on the high plateau of central Mexico have demonstrated that the common dietary pattern is fundamentally sound. This pattern is based on a liberal consumption of tortillas, beans, and chili peppers, supplemented to a greater or less extent with foods obtained locally. However, the caloric intake is low, little animal protein is consumed and insufficient amounts of riboflavin and niacin are obtained from the diet. Thiamine and mineral intakes are in general good.

Clinical evidences of nutritional deficiencies were uncommon in the population groups studied, but there were indications of mild deficiencies, particularly of lack of vitamin B-complex. By United States standards the growth of Mexicans is retarded and their stature is small; but racial and other factors, besides nutrition, may contribute toward these physical characteristics.

Hemoglobin levels were excellent, partly because of the altitude and partly owing to the large consumption of iron. Anemia was not often noted.

Definite clinical evidence of deficiencies in vitamins A and C were rare. Blood serum levels and dietary intakes of vitamin A varied from good in some groups to moderately low in others. The average blood serum level of vitamin C for one population group was unusually good owing chiefly to the consumption of pulque, a mildly alcoholic drink which in the quantities taken was a good source of this vitamin. Blood serum levels of vitamin C in the other population groups were less favorable and intakes were low by present standards.

While there is need for improvement in the quantity and quality of the average Mexican diet, attempts at modification should take into account the fact

that there is much of nutritive value in the food usually consumed. To try to impose the food pattern recommended for a United States population upon a country like Mexico, with its present food resources and economic and social conditions might lower rather than improve the nutritional status of the people.

NOTE: We wish to express our appreciation of the coöperation and facilities afforded us by Dr. Francisco de P. Miranda, Director of the Institute of Nutrition, Dr. Manuel B. Marquez Escobedo, Director of the Training Center of the School of Hygiene, and Dr. Angel de la Garza Brito, Director of the School of Hygiene, without whose assistance and support these studies would not have been possible. We are also indebted to our technical staff for their capable assistance, particularly to Sr. Leobardo B. Terpan, Srta. Mercedes Prieto Lopez, Srta. Consulo Sanchez Mesa, and Srta. Antonia Montano S.

REFERENCES

1. Robinson, W. D., Payne, G. C., and Calvo (de la Torre), J. A Study of the Nutritional Status of a Population Group in Mexico City. *J. Am. Dietet. A.*, 20:289–297 (May), 1944.

2. Calvo, J., Serrano, G., Millan, R. Segura, Miranda, F. de P., and Anderson, R. K. Nutritional Status of Economically Poor Families Fed in a Government-operated Dining Room in Mexico City. *J. Am. Dietet. A.*, 22:297–302 (Apr.), 1946.

3. Anderson, R. K., Robinson, W. D., Calvo (de la Torre), J., and Payne, G. C. Nutritional Status during Pregnancy and after Delivery of a Group of Women in Mexico City. *J. Am. Dietet. A.*, 22:588–593 (July), 1946.

4. Anderson, R. K., Calvo, J., Serrano, G., and Payne, G. C. A Study of the Nutritional Status and Food Habits of Otomi Indians in the Mezquital Valley of Mexico. *A.J.P.H.*, 36:883–903 (Aug.), 1946.

5. Anderson, R. K., Calvo, J., Serrano, G., and Payne, G. C. Nutritional Status of a Typical "Ejido" Village in the "Bajio" Area of Mexico. Unpublished data.

6. Calvo, J., Serrano, G., and Payne, G. C. Estudio sobre el estado de nutricion de un grupo de personas vecinas del pueblo de Capula, Estado de Michoacan. Unpublished data.

7. Cravioto, B. R., Lockhart, E. E., Anderson, R. K., Miranda, F. de P., and Harris, R. S. Composition of Typical Mexican Foods. *J. Nutrition*, 29: 317–329 (May), 1945.

8. Wintrobe, M. M. *Clinical Hematology*. Philadelphia: Lea & Febiger, 1942, pp. 200–201.

9. Evelyn, K. A. Stabilized Photoelectric Colorimeter with Light Filters. *J. Biol. Chem.*, 115:63–75 (Aug.), 1936.

10. Robinson, H. W., and Hogden, C. G. Biuret Reaction in the Determination of Serum Proteins; Study of Conditions Necessary for Production of Stable Color Which Bears Quantitative Relationship to Protein Concentration. *J. Biol. Chem.*, 135:707–725 (Sept.), 1940.

——— Biuret Reaction in the Determination of Serum Proteins; Measurements Made by Duboscq Colorimeter Compared with Values Obtained by Kjeldahl Procedure. *J. Biol. Chem.*, 135:727–731 (Sept.), 1940.

11. Kimble, M. S. Photocolorimetric Determination of Vitamin A and Carotene in Human Plasma. *J. Lab. & Clin Med.*, 24:1055–1065 (July), 1939.

12. Mindlin, R. L., and Butler, A. M. Determination of Ascorbic Acid in Plasma: A Macromethod and Micromethod. *J. Biol. Chem.*, 122:673–686 (Feb.), 1938.

13. Bodansky, A. Phosphatase Studies: Determination of Serum Phosphatase. Factors Influencing Accuracy of Determination. *J. Biol. Chem.*, 101: 93–104 (June), 1933.

14. Milam, D. F., and Anderson, R. K. Nutrition Survey of an Entire Rural County in North Carolina. *South. M. J.*, 37:597–605 (Nov.), 1944.

15. Youmans, J. B., Patton, E. W., and Kern, R. Surveys of the Nutrition of Populations. Description of the Population, General Methods and Procedures, and the Findings in Respect to the Energy Principle (calories) in a Rural Population in Middle Tennessee (Part 2). *A.J.P.H.*, 33:58–72 (Jan.), 1943.

16. Milam, D. F., and Darby, W. J. The Average Diet of a Southern County and Its Effects on the Nutritional Status. *South. M. J.*, 38:117–125 (Feb.), 1945.

17. Corn Germ, a Valuable Protein Food. *Nutrition Rev.*, 2:212–213 (July), 1944.

18. Pellagra and Corn. *Nutrition Rev.*, 3:267–269 (Sept.), 1945.

19. Krehl, W. A., Teply, L. J., Sarma, P. S., and Elvehjem, C. A. Growth-retarding Effect of Corn in Nicotinic Acid–low Rations and Its Counteraction by Tryptophane. *Science*, 101:489–490 (May 11), 1945.

20. Unpublished data, Mexican National Institute of Nutrition.

21. Cravioto, R. O., Anderson, R. K., Lockhart, E. E., Miranda, F. de P., and Harris, R. S. Nutritive Value of the Mexican Tortilla. *Science*, 102:91–93 (July 27), 1945.

22. Hurtado, A., Merino, C., and Delgado, E. Influence of Anoxemia on the Hemopoietic Activity. *Arch. Int. Med.*, 75:284–323 (May), 1945.

23. Levels of Carotene and Vitamin A in Human Blood. *Nutrition Rev.*, 3:38–39 (Feb.), 1945.

24. Feder, V. H., Lewis, G. T., and Alden, H. S. Studies on the Urinary Excretion of Riboflavin. *J. Nutrition*, 27:347–353 (Apr.), 1944.

25. Snell, E. E., and Strong, F. M. A Microbiological Assay for Riboflavin. *J. Ind. Eng. Chem., Anal. Ed.*, 11:346–350 (June), 1939.

26. Huff, J. W., and Perlzweig, W. A. A Rapid Method of Estimating N1-methylnicotin-Amide in Urine. *J. Biol. Chem.*, 150:483–484 (Oct.), 1943.

27. Kruse, H. D. Medical Evaluation of Nutritional Status. IV. The Ocular Manifestations of Avitaminosis A, with Especial Consideration of the Detection of Early Changes by Biomicroscopy. *Pub. Health Rep.*, 56:1301–1324 (June 27), 1941.

28. Anderson, R. K., and Milam, D. F. Biomicroscopy of the Eyes in Evaluation of Nutritional Status. Conjunctival Changes. *J. Nutrition*, 30:11–15 (July), 1945.

29. Darby, W. J., and Milam, D. F. Field Study of the Prevalence of the Clinical Manifestations of Dietary Inadequacy. *A.J.P.H.*, 35:1014–1021 (Oct.), 1945.

30. Anderson, R. K., and Milam, D. F. Biomicroscopy of the Eyes in Evaluation of Nutritional Status. Corneal Vascularization. *J. Nutrition*, 30:17–24 (July), 1945.

Development of a Voluntary Agency for Venereal Disease Control*

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IN 1841, a Frenchman who had visited America wrote the following:

> Americans of all ages, all conditions and all dispositions constantly form associations . . . religious, moral, serious, futile, extensive or restricted, enormous or diminutive . . . If it be proposed to advance some truth, or to foster some feeling by the encouragement of a great example, they form a society. Wherever, at the head of some new undertaking, you see the government in France, or a man of rank in England, in the United States you will be sure to find an association . . . I have often admired the extreme skill with which the inhabitants of the United States succeeded in proposing a common object to the exertions of a great many men, and in getting them voluntarily to pursue it.[1, 2]

The "common object" for the Los Angeles Venereal Disease Council was arrived at during a teaching program in which nurses in service, students from the University of California, and three schools of nursing were oriented in public health as practised by the Los Angeles City Health Department in a program consisting of two days of formal lectures on venereal diseases and one month of practical experience in the department. Organized to meet the requirements of the State Board of Nurse Examiners, the first course was held toward the end of August, 1943.

This teaching program, as well as the Venereal Disease Council, was conceived and developed by a state public health nurse assigned to the Los Angeles City Health Department. She had had experience with a lay organization for the advancement of public health in Alameda County. She had seen the usefulness of that organization in promoting public health, supplying the official health agency with needed personnel and equipment items, and in bringing to the attention of civic governing bodies the importance of an adequate budget for health. Certain guiding principles in organization were obtained from publications of the American Social Hygiene Association.[3, 4]

The third lecture series for nurses was expanded to include a few guests from health and welfare agencies. Other social agencies became attentive and the fourth series of lectures was attended by approximately 100 persons, some attracted by newspaper publicity given to the meeting. At this institute of November 19, 1943, on the medical, public health, social, and psychiatric aspects of venereal disease control, a panel discussion aroused such interest and so many unanswered problems that members of the panel met formally at a later date to discuss plans for organized venereal disease education in city schools.

As a result of general interest, ideas unfolded. Some thirty-two additional persons, representing City and State Departments of Health, schools and colleges, newspapers, police officers, radio studios, medical specialists, labor, Parent-Teacher Association, League

* Address presented at Western Venereal Disease Control Officers' Conference, San Francisco, Calif., May 25, 1947.

of Women Voters, Council of Social Agencies, American Institute of Family Relations, and Catholic, Protestant, and Jewish church representatives accepted invitations to join the original panel group of seven. The City Health Officer called the first committee meeting December 7, 1943. Some twenty-five attended. A temporary chairman and a secretary were elected. The chairman appointed finance, planning, and nomination committees. A short talk on present venereal disease control activities was delivered. Committee members suggested that more work should be done in public education, school education, and in the rehabilitation of sex delinquents. A resolution was adopted requesting that the Surgeon General make permanent recordings of the K.F.I. radio broadcasts on venereal diseases, which at that time were receiving national attention.

The planning committee met again in December to prepare for a general meeting on January 20, 1944. Fourteen more members were added, including representatives from the Merchants and Manufacturers Association, Hollywood, political organizations, courts, various governmental institutions, and other health department members. At the January meeting it was reported that, due to the influence of the Council, the Parent-Teacher Association had employed a nationally known authority on sex education for the purpose of instructing teachers in facts and methods of presenting sex education in primary and secondary schools. This program was approved by the Board of Education. Teacher credits were allowed. At the same meeting, a well known family relations expert delivered a talk on divorce in relation to venereal disease, and a professor of psychology of a local college presented plans for a psychologic work-up for venereal disease inpatients. It was thought that individual findings of the latter study could be useful in making referrals to the rehabilitation program of the California Youth Authority. During this second meeting, the desirability of having an executive secretary who would carry out the instructions of the committee, was mentioned.

The group formally went into action February 10, 1944. Regular officers were elected, an executive committee was selected, the name "Coördinating Committee for Venereal Disease Control" was chosen, subcommittees on finance, publicity, education, institutes, and psychologic studies were appointed, and a statement of purpose was formally adopted.

The statement of purpose reads as follows:

> It is the purpose of the Coördinating Committee to serve as a clearing house, information center, and medium of exchange for various community organizations which have to do with problems relating to venereal disease control in its broader aspects; to stimulate interest in problems that need attention, and to extend and facilitate the services of the health department in the control of venereal disease. The Coördinating Committee is not an operating organization but functions in an advisory, promotional and coördinating capacity. Through its services the work of other community agencies in the solution of venereal disease and related problems is to be promoted as well as that of the health department.

This purpose of the organization is in effect that of any non-professional and nonofficial voluntary health agency. It is promotional in character, utilizing the methods of education, publicity, and propaganda to achieve the two essential needs: (1) justification—by carrying the gospel, and (2) perpetuation—by attracting new members and new support. It also enlarges the field of activity to include the basic factors of promiscuity and "average of concern for body health" in the spread of venereal disease as related to education, opportunity, housing, medical care, and other normal human growth requirements. In line with current thought,

the committee was not to carry out operational functions. However, some operational tasks are necessary even to a voluntary health agency. Some tangible demonstration of usefulness and some promotional springboard, such as chest x-rays or blood tests, must be carried out.

Following the formal organization of the committee, rules of membership, policy statements, and a constitution were formulated by the executive committee and adopted by the membership. At each subsequent regular monthly meeting, leaders in governmental and voluntary agencies presented formal talks on their activities in relation to venereal disease control. Speakers included members of the police department, judiciary, Department of Institutions, Mayor's office, and Social Protective Division of the Federal Security Agency. Since the Venereal Disease Council was nonofficial and responsible only to itself and the public, it could, and did, scrutinize the activity of every agency. Mystics and logicians alike were granted impartial hearings.

In 1945, the committee was well under way. Early in the year a resolution memorializing the Mayor and City Council to study ways and means for increasing the health budget, was drawn. This resolution was in turn backed by the Association of School Physicians, Council of School Nurses, the Junior League of Los Angeles, Los Angeles Central Labor Council, Southern California Association of Life Science Teachers, Tenth District Parent-Teacher Association, California Protective Society, Health Division of Welfare Council, League of Women Voters, Los Angeles County Probation Committee, and a Teachers' Union. In later meetings with the Mayor, supported by Army, Navy, and Public Health Service officials, an emergency increase of approximately $78,000 per year was obtained for the health department. This, in my opinion, has been the greatest contribution of the committee.

At about the same time, connection with the Columbia Foundation [3] was established, and arrangements were made for the committee to receive a grant of $10,000. This fund was made available for one year, during which time the committee was to demonstrate its worth to the community. Support during succeeding years was, in the Foundation's judgment, to come from other sources. The committee incorporated under the title of the "Venereal Disease Council of the City and County of Los Angeles," a name adopted earlier to eliminate the objectionable and indefinite terms of "Coördinating" and "Control" and to widen the area to be served.

An excellent selection was made in employing an executive secretary who was well qualified, scholastically and by experience, and was very personable. This selection was possible during a time of acute labor shortage because of a relatively high salary. He began work in July, 1945, 1½ years after formal organization of the committee. There can be no doubt about the wisdom of this move, yet in retrospect it seems that the Council members' participation decreased slightly while the executive secretary's responsibilities increased.

A diagrammatic picture of the organization from its inception to January, 1947, is presented by the following list of projects and accomplishments. The Council:

1. Revealed as a result of a telephone survey that social agencies lacked information but had an enthusiastic desire to participate in the program.

2. Instituted psychologic work-ups consisting of psychometric tests, personality inventories and aptitudes, on venereal disease patients.

3. Secured Parent-Teacher Association funds and sponsorship for a series of lectures

over an 18 month period on sex education. Approximately 850 persons completed the course.

4. Surveyed prison facilities for prostitutes and encouraged improvements in jail recreational and rehabilitation programs.

5. Compiled a bibliography on the venereal diseases for public libraries.

6. Actively supported the health department in a substantial improvement in the budget for personnel.

7. Supported increase in salary for public health nurses.

8. Developed with the Board of Education a sex education lecture series for mothers attending child health clinics.

9. Submitted a resolution to the Board of Education requesting an exploration of needs and methods of sex education in public schools. This was formally acknowledged by the Board which authorized the formation of a study committee of experts and interested persons.

10. Actively assisted in the educational program at the local Rapid Treatment Center, arranging for circulating library service at this institution.

11. Obtained permission of Catholic authorities to resume showings in schools of the film "Know for Sure," which had been withdrawn due to their objections.

12. Supplied and distributed many pamphlets on sex education. Prepared the pamphlet *Do You Know* and posters on the Rapid Treatment Center for clinic patients.

13. Maintained an active program of film showings and lectures on venereal disease for public groups.

14. Materially aided in arranging educational and blood survey programs in six high schools.

15. Planned four large public institutes on all phases of venereal disease control.

16. Interested a local high school to plan and carry out a forum on health and family life for Public School Week. Sixteen schools participated.

17. Prepared material and participated in a weekly radio program on health and family life.

18. Completed a survey of adults regarding their source of sex information and their retrospective views on their schools' program.

19. Explored the need for an adequate teaching film on venereal disease for public schools.

20. Initiated five "work shops" for teachers on Family Life Education. Approximately 150 teachers completed these sessions.

21. Originated a program, with the coöperation of the Southern California Retail Druggists Association, for informing druggists regarding the procedure and importance of the proper referral of venereal disease patients.

22. Suggested the program of monthly mailings to private physicians on venereal disease trends, diagnosis, and treatment.

The sharing of problems and the pooling of experience in their solution, as exemplified in the Council, leads to group participation and group action. The process is slow but effective, and in looking backward, the number of accomplishments is surprising.

During the first part of 1946, the Council was faced with a termination of its funds by July. Several possible alternatives were presented: another grant from Columbia Foundation, which seemed unlikely; a special community solicitation of funds; Community Chest participation or a return to former nonbudgetary status. The Welfare Council of Los Angeles, made up of representatives of the Community Chest, recommended that the Council seek affiliation with the Los Angeles Tuberculosis and Health Association, and that if such was accomplished, a grant of $15,000 would be available for the Council's activities. This was in accord with the general recommendations of the Gunn-Platt report [6] which suggested the consolidation of voluntary health agencies for the purpose of pooling resources, limiting the number of public appeals for funds, better distribution of expenditures, and for promotion of general health, not specific diseases.

Though there was some disagreement with this report by a member [7] of its Advisory Committee, it was almost universally agreed that a venereal disease organization could not raise public funds independently, and should properly align with a larger health agency. The Los Angeles Tuberculosis and Health Association was reluctant to include the venereal diseases in its program, but after mature consideration and consultation with the Welfare Council and the California Social Hygiene Association, a

one year trial marriage was consummated on February 19, 1947. The offices of the Council's Executive Secretary were moved to the Tuberculosis Association and the Council suspended its activities in favor of a committee selected by the Executive Board of the Association. Just prior to this union, the Venereal Disease Council affiliated with the American Social Hygiene Association, and will, with the Tuberculosis Association's committee, serve as the local outlet of the American Social Hygiene Association.

It is believed that this change is a step forward for three reasons: (1) A certain organizational stability is gained; (2) the community standing of the Tuberculosis and Health Association lends prestige to venereal disease problems; and (3) the educational and promotional experience and equipment of that agency may be directed to study and combat the venereal diseases. However, certain undesirable elements are attached to this amalgamation, i.e., the enthusiasm that accompanies a new and unconventional organization is lost; the Council is yoked with the traditions, patterns, and dignity of an old and crystallized agency; and, due to administrative policy, those actively concerned with venereal disease control are removed from direct relationship with the new committee.

A story of pathfinding experience has been given. Welfare agencies of neighboring communities in Los Angeles County are seeking similar organizations. According to the American custom, many such organizations are to be expected. This writer would advise venereal disease control officers to support them in their growth and development. They may be harassing and irritating at times, but they can also be very useful in the general promotion of the control program. Some will no doubt feel that a voluntary agency for the venereal diseases is not justified since the efforts of official agencies are well organized and developed. No one, however, will disagree that promotional activity could be multiplied and improved, or that the underlying factors in the spread of these diseases have scarcely been touched.

REFERENCES

1. Cavins, Harold M. *National Health Agencies.* Washington: Public Affairs Press, 1945, p. 33, etc.
2. de Tocqueville, Alexis. *Democracy in America,* 4th ed. New York: J. & H. G. Langley, 1841, Vol. II, pp. 114–115.
3. *Suggestions for Organizing a Community Social Hygiene Program.* New York: American Social Hygiene Association, *Publ. A433,* 1942.
4. Kirkendall, Lester A. Now Is the Time to Prepare. *Am. J. Soc. Hyg.,* 28:458, 1942.
5. Harrison, S. M., and Andrews, F. M. *American Foundations for Social Welfare.* New York: Russell Sage Foundation, 1946, p. 120.
6. Gunn, Selskar M., and Platt, Philip S. *Voluntary Health Agencies.* New York: The Ronald Press Company, 1945.
7. Armstrong, D. B. Facts and Fallacies in the Integration of National Voluntary Health Agencies. *J.A.M.A.,* 7:587, 1946.

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Study of Vision Testing Procedures*

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THIS report deals with some observations made during a study of the vision of children carried on at the University School, Ohio State University, in the spring of 1947. The study consisted of a thorough appraisal of the ocular functions of 203 children in the first through the eleventh grades and was a coöperative undertaking by members of the staffs of the College of Medicine, the College of Education, and the School of Optometry. A number of people contributed services and advice, and I am particularly indebted to Dr. Claude S. Perry of the Department of Ophthalmology and to Dr. Glenn A. Fry and Dr. Howard F. Haines of the School of Optometry for assistance in all stages of the investigation.

The main purpose of our study was to evaluate several widely known screening methods for testing visual function and to bring forth, if possible, some facts upon which plans for a vision testing program could be based.

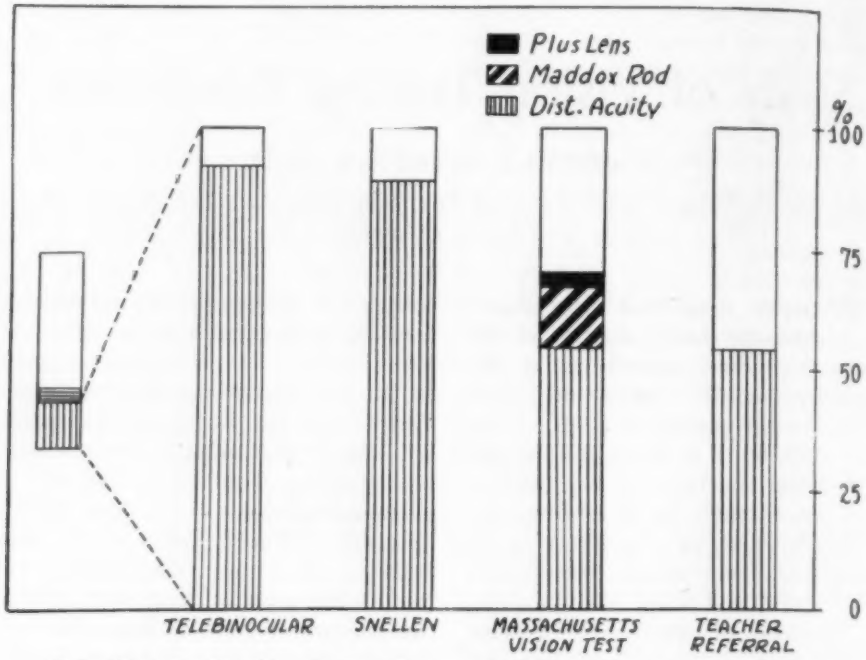
The need for periodic vision testing in schools has been amply demonstrated. School physicians, nurses, and administrators are now faced with the problem of deciding upon the scope and methods to be used in such a program.

Methods and Procedure—By random selection, determined only by the order in which parental permission was received, 203 pupils from the 1st through the 11th grades took part in the study. The Snellen Test for visual acuity at 20 ft., the Massachusetts Vision Test,[1, 2] and the Keystone Telebinocular Tests[3] were administered to each subject in an unhurried fashion and in quiet surroundings. For the Snellen Test, the illiterate "E" chart, artificially and evenly illuminated, was used. In administering the Massachusetts and Keystone Tests, the procedures prescribed in directions accompanying the apparatus were followed meticulously, except that the three parts of the Massachusetts Test were given, regardless of failure in one part. Additional procedures were employed, including tests for color-blindness, eye dominance, and near visual acuity. The same examiners also made precise measurement, in prism diopters, of ocular muscle functions.

Soon after these tests, but not on the same day, each subject was given a complete examination, with cycloplegia to relax accommodation, by an ophthalmologist. This examination included a search for pathologic conditions within and surrounding the eyes, and determination of refractive error by both retinoscopic and subjective methods. Some time later, after the effects of cycloplegia had completely disappeared, each child was reëxamined to determine the amount of correction required to obtain maximal acuity with accommodation functioning. For evaluative purposes in this study, the cor-

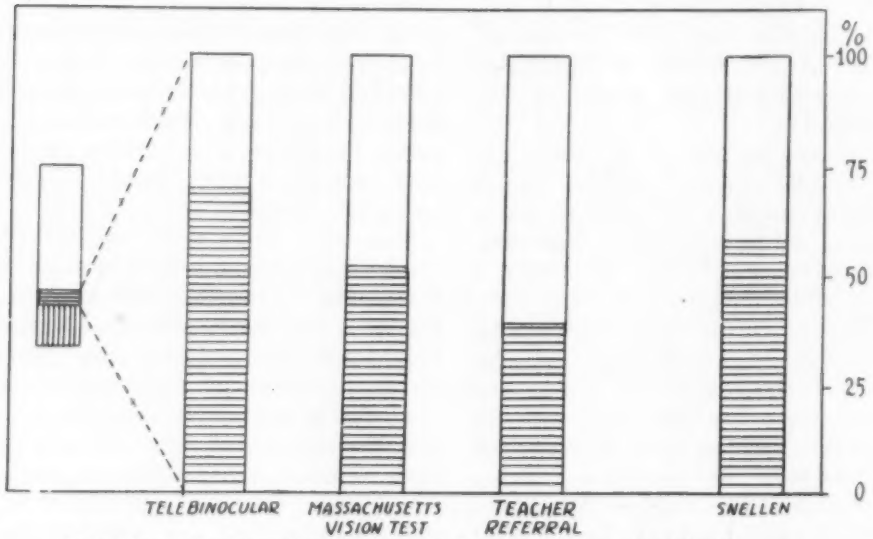
* Presented before the School Health Section of the American Public Health Association at the Seventy-fifth Annual Meeting in Atlantic City, N. J., October 6, 1947.

FIGURE 1



Detection of refractive errors by screening procedures.

FIGURE 2



Detection of uncomplicated muscle imbalance by screening.

NOTE: The small bar-graph on the left side of Figure 1 and Figure 2 shows the distribution of cases with refractive error (vertical lines), cases with muscle imbalance alone (vertical lines) and cases with normal vision (unlined) among the total group of 188 children.

rection required at this post-cycloplegic examination has been recorded as the refractive error.

Subjects who wore glasses were usually tested with and without them. With few exceptions the data used for these individuals are the results obtained with glasses, and opinion on need for referral is based on the difference between our refraction and the correction afforded by the subject's glasses.

Results—After elimination of incomplete records due to absence during part of the examination, data on 188 subjects were analyzed. In age distribution, each year of age between 6 and 15 was represented by from 6 per cent to 12 per cent of the total, while ages 16, 17 and 18 made up, respectively about 6 per cent, 4 per cent, and 0.5 per cent of the sample.

Specialists assisting in the study decided on the basis of errors of refraction that 47 cases, or 25 per cent, required treatment or observation. There is an additional group of 14 cases, 7.4 per cent, consisting of children who had no marked error of refraction but who proved to have sufficient ocular muscle imbalance to justify referral, making a total of 61 cases, or 32.4 per cent of the total group, whose detection by screening examination should be expected.* As there is some difference of opinion among specialists concerning the advisability of searching for muscle imbalance uncomplicated by errors of refraction, this group of 14 cases has been kept distinct and will be considered separately.

Except for the Snellen Test, the standards for referral or failure were those prescribed in directions received with the equipment. In the Snellen Test, children 7 years of age and younger were failed (referred) when vision in either eye was 20/40 or worse, while children older than 7 years were failed when either eye had vision 20/30 or worse. Figure 1 shows the performance of the three screening procedures in the group of 47 cases with refractive errors. The Telebinocular disclosed 43, or 91.5 per cent of them, the Snellen Test identified 42, or 89.4 per cent, and the Massachusetts Vision Test revealed 32, or 68.1 per cent. The accuracy with which teachers were able to select children in need of referral is also shown. While this is not a reliable procedure when used alone, teachers did select 25 cases, 53.2 per cent.

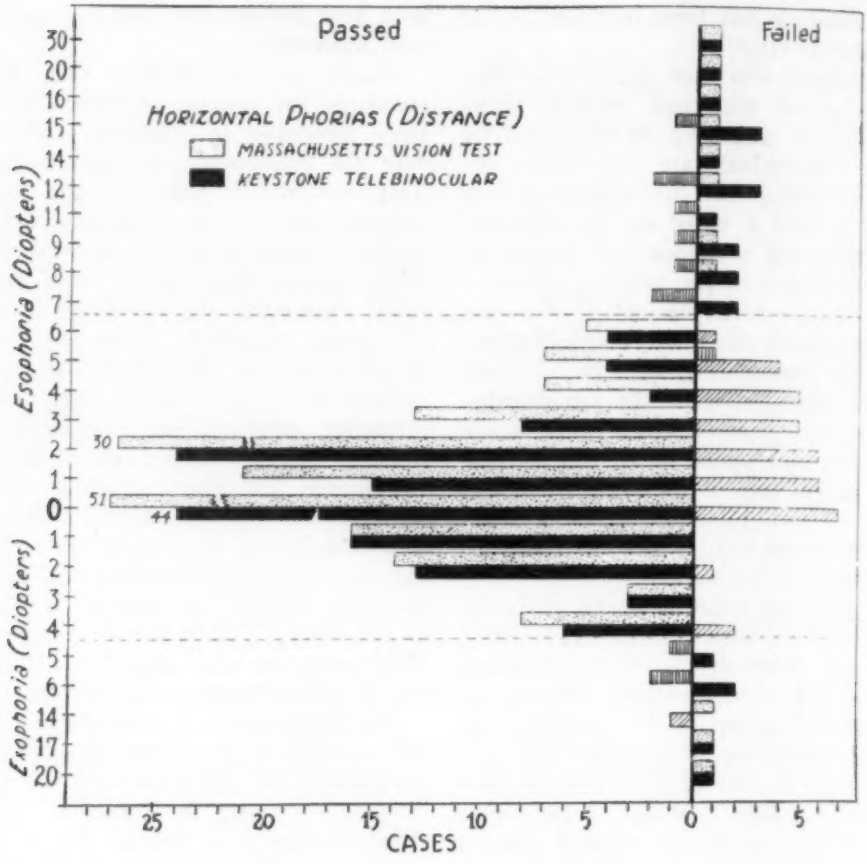
The performance of each test among the cases with muscle imbalance, uncomplicated by significant error of refraction, is shown in Figure 2. The Telebinocular Test revealed 11 of 14 cases, and the Massachusetts Vision Test disclosed 8 cases. It is interesting to note that 9 of the cases would have been referred for further examination on the basis of the Snellen visual acuity results, although that test is certainly not specific for imbalance.

With regard to ocular muscle balance, comparison of results from the tests specific for lateral imbalance from the Telebinocular and the Massachusetts Tests is worthy of note. The amount of esophoria or exophoria was accurately measured by optical prisms for comparison with screening results. In Figure 3 it is seen that in the test at 20 ft. the Massachusetts Test rarely fails a case unnecessarily, but does miss cases it is constructed to detect. The Telebinocular Test refers a great many

* Need for referral was established on these criteria: *Spheres:* +1.50 diopters or more; any amount of minus. *Cylinders:* under 13 years of age, —0.75 or more; age 13 years and over, —0.50 or more. *Phorias:* more than 6 prisms of esophoria or 4 prisms of exophoria at 20 ft., and more than 6 prisms of esophoria or 8 prisms of exophoria at near point; more than 1.25 prisms of hyperphoria.

Except for minus corrections these limits are thought to be too generous, especially for older children; but more rigid limits than those specified in the tests would have made impartial evaluation impossible. With respect to myopia, it is our belief that any degree of near-sightedness should be detected early and that the child, particularly an adolescent, should be under observation even though glasses may not be indicated at the first referral.

FIGURE 3

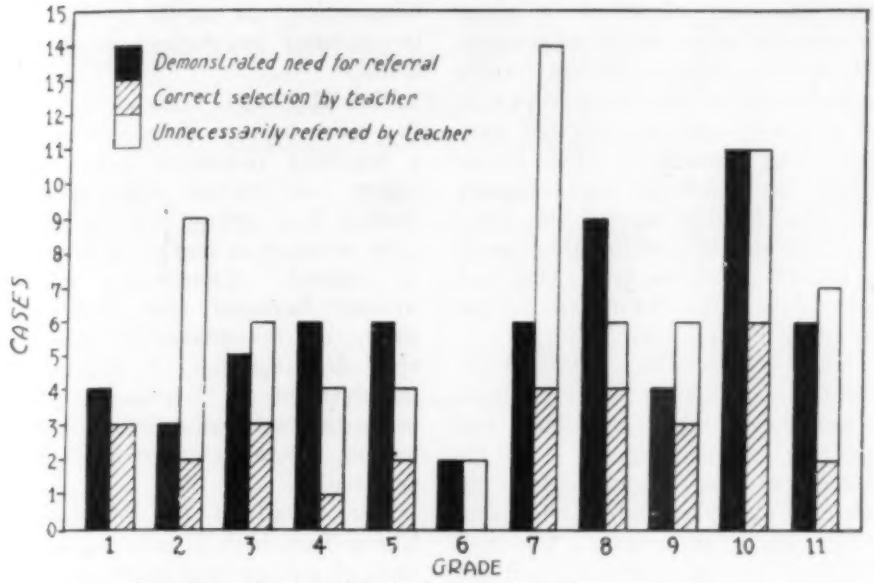


cases needlessly, but rarely misses significant ones. A similar pattern was found for each test in the case of imbalance at the reading distance.

Results from each test in the group of 127 cases considered as having no significant visual problem are as follows: Sixty-eight, 53.5 per cent, of these failed the Telebinocular Test; 28, 22 per cent, failed the Snellen Test; and only 2 cases, or 1.6 per cent, did not pass the Massachusetts Test.

We do not feel prepared at this time to make a final statement on the plus-sphere test. The test is based on sound physiological principles. Its usefulness, however, is limited by the small number of children who have sufficient degree of simple far-sightedness to accept a correction of +1.50 sphere. The test, in our study, was found to refer many children unnecessarily. In 6 instances 20/20 vision through the plus-sphere was recorded, when, according to refraction findings, this should not have occurred. There were many more occasions when 20/30 vision was noted without apparent justification. Technical errors may have been responsible, but it is doubtful whether the test will ordinarily be given under such favorable circumstances. We have become interested in investigating modifications in the technique of the test because this test theoretically at least should be a valuable addition to a screening procedure. For example, further study is needed to determine the amount of

FIGURE 4

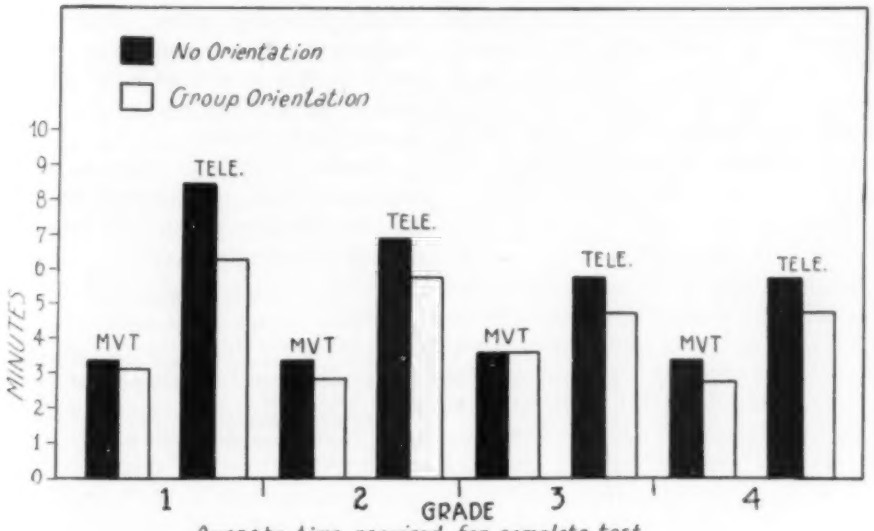


Detection of visual defects by teachers observations.

plus-sphere appropriate for testing in different age groups. Hyperopia of less than +1.50 diopters may properly be considered normal in very young children. Among older children, however, lesser degrees of hyperopia are significant, and for them it is probable that a spherical lens of +.75 or +1.00 diopters should be used in the test. Another matter under investigation is the length of time an individual should wear the plus-sphere before his visual acuity is determined in this test.

Inclusion of tests for visual acuity at

FIGURE 5



Average time required for complete test.

reading distance in school testing programs has been advocated by some. Theoretically such a test is not warrantable, since far-sighted children usually can accommodate sufficiently to pass it, and astigmatic and near-sighted individuals who would fail it would be expected also to fail the distance-acuity test. Our findings support this view, since only one-third of the group needing referral failed the test. Only one subject passed the distance-acuity test and failed the near-acuity test.

Figure 4 depicts the degree of accuracy with which teachers or counselors were able to select the children with significant visual problems. The irregular pattern indicated that the individual ability of each teacher plays a large part in the matter. The good records of several teachers emphasize the contribution which well trained, health conscious teachers can make to such a program.

The time required for administering the Massachusetts Vision Test and the Telebinocular Test was studied in four elementary grades. Students in each grade were divided into two similar groups, and one group in each grade received some preliminary explanation of the tests. The average time needed for students in each group is shown in Figure 5. In addition to the benefits from health teaching, there is a small saving of time in the instructed group which would become appreciable when a large number of children are to be tested.

COMMENT

At this stage in the analysis of our data several comments concerning these vision testing procedures seem justifiable: The Snellen Test for visual acuity at 20 ft. is the most reliable single screening procedure, when carried out carefully and with proper illumination. It should by all means be included in testing programs in schools.

The Keystone Telebinocular, when the entire battery of tests is used for a screening procedure, has a much higher over-referral rate than the Snellen Test and is not significantly more accurate in finding cases in need of referral. Unnecessary referrals, without increased case finding efficiency, are not economical. This criticism does not refer to the possible usefulness of the Telebinocular in investigating readiness for reading and reading failures, a matter we have not yet studied.

The record of the Massachusetts Vision Test, both in selecting cases in need of referral and in the margin of over-referral, seems too low for the purposes of a screening test in schools. Since the Snellen Test is included in the Massachusetts Test, more exacting criteria for referral would achieve at least the efficiency of the Snellen Test as employed in this investigation plus the cases discovered by the plus-sphere and Maddox rods. More rigid standards are particularly needed in the older school-age groups, where even small refractive errors merit careful evaluation. Recommendations with respect to this as well as some modification of the plus-lens test will be included in our final report.

Further analysis of our data is being directed toward recommendations for a simple, effective vision test for use in all school-age groups.

REFERENCES

1. Sloane, A. E. Massachusetts Vision Test. *Arch. Ophth.*, 24:924 (Nov.), 1940.

2. Amer. Med. Assoc., Council on Physical Therapy. Massachusetts Vision Test Acceptable. *J.A.M.A.*, 135: 158 (Sept.), 1947.

3. *Keystone Visual Survey Tests*, DB Series. Keystone View Co., Meadville, Penna.

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HEALTH AND ECONOMICS

WE are generally accustomed to trace recognition of the importance of economic factors in health to John Howard and Lord Ashley, and Edwin Chadwick and John Simon, the great English pioneers of sanitary reform in the 18th and 19th centuries. The English approach to these problems was, however, characteristically empirical; and its philosophical formulation was handicapped by the dominant *laissez faire* individualism of the times. George Rosen has performed a real service[1] in preparing a scholarly and well balanced "Genetic Analysis" of the concept of "Social Medicine," which we recommend to readers interested in the basic aspects of the problem. The first outstanding thinker in this field (after Johann Peter Frank) was Virchow who said a century ago: "Medicine is a social science and politics nothing but medicine on a grand scale." Edward Reich[2] in 1871 arranged his *System of Hygiene* under four main headings: Moral Hygiene (including mental hygiene); Social Hygiene (including the problems of poverty); Dietetic Hygiene (including not only nutrition but the whole field of personal hygiene); and Police Hygiene (conventional public health administration). He says, "Because social life depends, on the one hand, on the physical and moral constitution of individuals, and on the other, on property; the measures taken by social hygiene can be effective only if they aim to improve the constitution, and at the same time make possible a natural development of the property relationship. Above all else social hygiene must wipe out poverty, for as long as this exists there can be no question either of improving the constitution or of a normal development of economic relations." Finally, Alfred Grotjahn in the present century conceived clearly the idea of systematic investigation of medical problems in the light of social science, so as "to arrive finally at a theory of social pathology and social hygiene which, with its own methods . . . would be used to investigate and to determine how life and health, particularly of the poorer classes, are dependent on social conditions and the environment." [3]

An even more exhaustive review of this subject has recently appeared from the pen of René Sand, a distinguished Belgian pioneer in the field of social medicine.[4] He defines "Social Medicine" as "the art of prevention and of cure, considered . . .

from the point of view of the reciprocal relations which relate the health of men to the conditions of their life." Sand's book is primarily historical and is written with a width of vision not before achieved in this field. He ranges from Egyptian records of 3000 B.C. to the Constitution of the World Health Organization. Major chapters deal with the history of the medical profession in its various social and economic relations; with hospitals, outpatient services, and social service; with personal hygiene, public hygiene, social hygiene, and occupational hygiene; with public assistance; and with the basic sciences relating to man (demography, anthropometry, psychology, sociology, and the like). In a final chapter, Dr. Sand reviews 20th century advances of social medicine in Germany and Austria, France, Belgium, the Netherlands, Italy, Czechoslovakia, Romania, Jugo-Slavia, Great Britain and its Dominions, the United States and Latin America, with an unfailingly keen perception of major trends.

The critical reader may be inclined to point out that the gross social inequalities which stirred Chadwick and Simon, Virchow and Reich in the 19th century no longer exist in the England or the United States of today. This contention is relatively sound. The difference between economic classes has been measurably narrowed so that the condition of what Chadwick described as "the laboring population"—in fortunate countries like ours—has been greatly ameliorated; but the gap has not been closed, as pointed out at our Atlantic City Convention last fall.[5]

The contribution by Terris in this issue of the *Journal* brings out an interesting relationship between economic and occupational status and tuberculosis rates in the City of Buffalo. The mortality from this disease was, of course, higher at low economic levels. For males under 35 years of age and for females at all ages, the figure for the lowest economic group was about twice that for the highest economic group. For males over 35 years of age, however, the figure for the lowest economic group was three and one-half times that for the highest economic group. This excess Dr. Terris reasonably attributes to conditions of occupation.

The same relationship is brought out with striking force in the recent *Statistical Yearbook* of the New York Tuberculosis and Health Association.[6] The actual death rate for white persons in New York City is almost the same for males and for females up to the age of 34 years (between 18 and 31 per 100,000 at ages 20 to 34). From 35 years on the rate for females drops from 27 at 30-34 years to 16 at 45-49 years and then rises to 34 per 100,000 at 70-74 years. But the rate for white males rises steadily from 31 at 30-34 years to 142 at 70-74 years.

This may be due to some physiological difference between the sexes; but it seems far more probable that the strains of earning a livelihood are the major factors at work.

Social hygiene (in the broad sense) still has its serious problems to be solved.

REFERENCES

1. Rosen, G. *Bull. Hist. Med.* 21:674 (Sept.-Oct.), 1947.
2. Reich, E. *System der Hygiene.* Leipzig: F. Fleischer Verlig, 1870-1871.
3. Grotjahn, A. *Enlebter und Erstrebtes Kommissions-Verlag.* F. A. Herbig. G.M.B.H., 1932.
4. Sand, R. *Vers la Médicine Sociale.* Lieges J. B. Bailliere et fils. 1948, 671 pp.
5. Winslow, C.-E.A. *A. J. P. H.* 38:173 (Jan.), 1948 (Part II).
6. *Tuberculosis Statistical Reference Yearbook.* Year 1946. New York Tuberculosis and Health Association. 1947.

THE PUBLIC HEALTH NURSE AND THE SOCIAL WORKER

THE present issue of this *Journal* contains at least three articles which involve, in some measure, emphasis on the respective roles of the public health nurse

and the social worker in dealing with important present-day health problems. Perhaps perusal of these articles may stimulate the reader—as it did the Editor—to speculate on the relations of these two professions.

A commonly accepted definition of public health reads as follows:

"Public health is the science and the art of preventing disease, prolonging life, and promoting physical and mental health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing services for the early diagnosis and treatment of disease, and the development of the social machinery which will ensure to every individual in the community a standard of living adequate for the maintenance of health."

The attempt to find a definition of public welfare which has received a similarly general recognition in that field has proved unsuccessful. The Editor therefore asked two friends, of distinguished eminence in social work, to try their hand at such a formulation—with the following result: "Public welfare (social welfare) is concerned with all activities relating to the well-being of the individual and the group. It encompasses prevention of social disorders, treatment of social maladjustments, and the development of a social order which provides the essentials for a satisfying life. Public welfare is advanced through social and health services to the individual and the group (such as psychiatric and psychological services, social case work, financial assistance, and recreation) social action (such as the organized efforts of the community and legislation), and education."

The reader will note that public health theoretically annexes the whole field of social welfare under "the development of the social machinery which will ensure a standard of living adequate for the maintenance of health." On the other hand, social welfare, politely but firmly, takes possession of the field of public health, since "social and health services to the individual and the group" are essential prime elements in the advancement of social welfare.

Both these contentions are entirely sound; and they indicate the need for mutual understanding between two closely related and overlapping professions. The most concrete possibility of jurisdictional misunderstanding lies in the individual home. Most cases of sickness involve social problems; and most cases of poverty are likely to involve health problems. The public health nurse will often need the aid of the family social worker and the social worker will often need the help of the nurse. The primary classification of a given family may be a matter of chance, depending on whether sickness or economic stress happened to cause the primary visit of one or the other field worker. Incidentally, it may be pointed out that the social worker tends more and more to limit her home visiting, believing that the client may be freer to discuss his, or her, problems apart from the family setting, which at a given time may be confused or under tension.

Ideally, as it seems to us, there should be available for any given area a district field worker of each of these two types. In the health field, there is general acceptance of the standard of one public health nurse for every 2,000 people; and this ideal is already realized in our best organized communities. In many rural areas the nurse—for lack of adequate social service—is forced to fill both health and social functions; and in Monmouth County, N. J., such a program is definitely in force. More than fifteen years ago, a public health surveyor had the temerity to suggest that at least one generalized social worker should be provided for every 10,000 persons in the population. If some goal of this sort could be set, it would clarify planning in the wide borderland of health and welfare.

Intelligent coöperation between nurse and social worker should be facilitated

by current trends of thought with respect to the training of the social worker herself. The schools of social work are reconsidering their curricula with a view to developing a more adequate "core program" which would avoid premature specialization but give each student a wider vision of the basic principles in social work (including its health aspects) which are important for the generalized social case worker.

There will be resistance in certain localities to a generalized social case work program, due to the traditional feeling that the worker in a public welfare department who provides direct relief in the form of money grants, food, clothing, shelter, and medical care must deal only with the indigent or the near-indigent. This is, however, a prejudice which is gradually losing its force. A sound public welfare program should include case work service to all families who need such service, whether they also require direct relief or not.

Even, however, if we agree on the desirability of providing for the homes of every area a local field worker in public health nursing and a local field worker in public welfare, we should be only at the threshold of our jurisdictional possibilities. Nearly all health problems and most social problems involve emotional stresses; and the psychiatric social worker comes into the picture. Working out from the hospital and clinic is the medical-social worker. In the health or social agency is the nutritionist. In many localities there may be still other specialists of diverse allied types—dealing with poliomyelitis or rheumatic fever, or deficiencies in sight or hearing.

It is clearly uneconomical and ineffective to have five or six different experts in the fields of health and welfare visiting the home. In public health nursing the ideal of generalized district service has been almost universally accepted—though not as yet always realized. The field worker in such a program must have enough training in allied knowledges to know where her own competence ends; and she must have at her disposal expert specialists for consultation in their various fields. There might be real gain in a program under which there were two, and only two, workers for home visiting, the district nurse and the district social worker, both with some training in the elements of mental hygiene—coöperating with each other and relying on the specialist to supplement their less intensive skills. The representative of medical-social service in a hospital or of a local mental hygiene clinic should naturally have access to the home but would go in after mutual agreement with, or referral by, the public health nurse or the family social worker under whose general jurisdiction a given family might be. Perhaps this is a Utopian dream—perhaps just a nightmare. Possibly it may be a problem which the American Public Welfare Association and the American Public Health Association might study to advantage through a joint committee.

CHANGING ATTITUDE OF THE ARMY WITH REGARD TO VENEREAL DISEASES

IT is obvious that the control of the venereal diseases involves two major objectives: (1) reduction of exposure to infection, and (2) prompt treatment of the infected individual.

In World Wars I and II, the Army was not indifferent to the first line of approach. Effective procedures were adopted for controlling areas of prostitution in the vicinity of military encampments, with far-reaching results in the elimination

of red-light districts in many American cities; and, through education and the provision of recreational facilities, every effort was made to reduce promiscuous sexual intercourse. It would only be fair to say, however, that major emphasis in the total program was laid on medical treatment, both prophylactic and curative. The key to this latter approach during World War I was to be found in the provision that a soldier who developed venereal disease without record of prophylactic treatment was penalized, while if he had been recorded as receiving such treatment, he was not. This penalty was eliminated during the Second World War.

Today, the major emphasis of the program has been shifted from medical to moral grounds. A circular issued by the War Department a year ago[1] places responsibility for the whole venereal disease program on command channels and states that "the members of special staffs will be utilized only as technical advisers for that part of the program of venereal disease control specifically allied to their normal functions and responsibilities." The commanders must "impress moral responsibility and encourage strong self-discipline in officers and enlisted men of their command. Special attention will be given to the elimination of officers and non-commissioned officers, who, by the example of their private lives, undermine discipline and respect for command." Elaborate procedures of indoctrination are provided, with emphasis on "self control, self discipline, the worth of right conduct, clean living and its rewards, the obligation of the soldier to the home, the family and the nation." In this indoctrination, "Prophylaxis will be mentioned and discussed in a scientific manner, bringing out its limitations. No more than 10 per cent of the time of one lecture should be expended on the subject of prophylaxis. There should be no mass instruction in the details of prophylaxis. Those who desire this information should be referred to a medical officer for consultation." The chaplain, rather than the physician, is central in this program.

The wartime policies sought to remove the stigma from venereal disease, in order to facilitate prophylaxis and prompt treatment. The present program may seem to the average soldier intended to penalize venereal infection and promiscuity. Commanders must—

"Restrict military personnel infected with venereal disease to the unit areas for a minimum of 30 days, and, on recommendation of the surgeon, up to 90 days after the completion of treatment in order to diminish the chance of relapse or early reinfection and to insure, in the case of gonorrhea, that a co-existing syphilitic infection has not been masked by the treatment for gonorrhea. Individuals infected with venereal disease will not be evacuated to the zone of interior until 30 days have elapsed following completion of treatment. Exceptions to this working quarantine may be made only for medical reasons and when extreme hardship will result."

"In recommending the promotion of individuals and in the preparation of efficiency reports of officers, take cognizance of repeated infections of venereal diseases, intemperance, and similar traits and habits prejudicial to good order and military discipline."

"Restrict passes in the case of irresponsible individuals who repeatedly expose themselves to the risk of venereal disease. The granting of passes is a privilege and not a right and should be a reward of good conduct."

"Give consideration to the separation from the service, under the provisions of existing Army Regulations and directives, of individuals who demonstrate undesirable habits and traits of character including the repeated incurrence of venereal disease."

The working out of this plan at Fort Knox, Ky.[2] and of a similar plan in the First Army Command Area[3] has been described more fully—with editorial comment[4]—in the *Journal of Social Hygiene*. The program as a whole represents a radical reversal of past attitudes—both military and civil—with regard to the control of venereal diseases. Its results will be awaited with great interest. We are informed that Army incidence rates for syphilis and gonorrhea have gone down under

the new policy. It remains to be seen, however, whether such a reduction is real or imaginary. Obviously, the severe restrictions involved and implied, are not likely to stimulate free and ready recourse to prophylactic and treatment services. They might, on the other hand, lead to concealment of infection, recourse to quacks and self-medication, with serious ultimate results. Only time will tell. If the experiment succeeds, it will be a major contribution to our thinking about the whole problem of sex hygiene.

REFERENCES

1. *J. Social Hyg.* 34:122 (Mar.), 1948.
2. Devine, J. M. *J. Social Hyg.* 34:195 (May), 1948.
3. Carroll, G. J. *J. Social Hyg.* 34:201 (May), 1948.
4. *J. Social Hyg.* 34:193 (May), 1948.

THEY ALSO SERVE WHO ONLY SIT AND WRITE

THE visit of a staff member of the Association to the Spring Meeting of one of its constituent associations (The South Carolina Public Health Association)—in addition to delightful memories of Southern hospitality—brought one quite revealing experience. This was the organized representation of the health department clerical staff on the program. The conference, as usual, had formal group sectional meetings for health officers, nurses, engineers and sanitarians, health educators, and nutritionists; but it had also a sectional meeting for secretaries, stenographers and clerks. We understand that this development is not unique in the South; but it is certainly unusual in most of our state meetings.

We believe that this recognition of a group of workers whose service is so vital in daily routine constitutes a step of primary importance in the development of sound health department practice. The work of the technical expert would be sadly handicapped without the diligence, the accuracy, the imagination—and the diplomacy in public contacts—of the clerical staff. This group of essential public health personnel will function at a much higher level with a broad view of their tasks; any assistance and any encouragement we can give them will be amply rewarded.

Clearing House on Public Health Salary Information

ANNUAL NURSE SALARY STUDY

THE annual nurse salary study of the National Organization for Public Health Nursing was published in three parts in the October, 1947, February and March, 1948, issues of *Public Health Nursing* and dealt with salaries of nurses, clerks, and non-nurse professional workers. The study is based on 641 agencies—state, county, and municipal health departments, boards of education, and nonofficial agencies employing a total of 10,351 nurses.

In the October, 1947, *Public Health Nursing*, median salaries for 1942, 1945, and 1947 are shown for three groups of nurses—directors, generalized supervisors, and generalized field nurses—in nonofficial agencies and in county and municipal health departments and for supervisors and school nurses of boards of education. These groupings represent nearly 7,000 of the total reported on, 260 directors, 528 supervisors, 5,109 generalized field nurses, and 998 school nurses.

For these groupings median salaries rose in the 5 years from 27 to 46 per cent, with the major increases between 1942 and 1945. The percentage increases, together with 1947 median salaries for the various groups, were as shown below.

It will be noted that, except for directors, the highest medians were reported by municipal health departments, a situation related in part to the size of the nursing staff. It will further be noted that the median for school nurses is higher than for generalized field nurses except in municipal departments although the school nurse's year is shorter than that of other nurses.

The published analysis also shows median salaries for all these groups classified by the number of nurses employed by agencies. As might be expected there is a fairly close correlation between salaries and size of agency which becomes inverse with agencies employing only one nurse or fewer than 5 nurses.

Detailed analyses for other occupational classifications and other agencies, chiefly state health departments, as well as by geographical areas have been made by the statistical service of the National Organization for Public Health

	Directors	*Generalized Supervisors*	*Generalized Field Nurses*	*School Nurses*
1947 Median Salaries				
Nonofficial Agencies	$3,521	$2,921	$2,161	$ ....
Official Health Departments				
Municipal	3,169	3,338	2,527	....
County	3,032	2,869	2,265	....
Boards of Education	....	2,931	....	2,481
Percentage increase 1942–1947				
Nonofficial Agencies	33	46	34	..
Official Health Departments				
Municipal	27	34	34	..
County	42	46	40	..
Boards of Education	..	34	..	41

Nursing, which is prepared to furnish on request detailed data to public health administrators and directors of public health nursing.

Studied also in 1947, the first time since 1940, were salaries of non-nurse professional workers (*Pub. Health Nurs.*, Feb., 1948) in the agencies reporting on nurse salaries. Only 83 of the 41 agencies reported such workers numbering 209, more than half of which were about equally divided between state health departments and nonofficial agencies. The most numerous were nutritionists of whom 69 were reported.

The median salaries for the group of non-nurse professional workers, except for dental hygienists and physical therapists were nearly as high as those for generalized supervisors, but the small numbers involved may actually invalidate the significance of these figures. They should be studied in relation to size of agency, geographical location, etc.

Clerical salaries in the nursing services or departments were also reported (*Pub. Health Nurs.*, Mar., 1948). Perhaps the most significant single figure is the ratio of clerks to nurses. In all types of agencies 1,414 clerks were reported, representing one clerk to more than 7 nurses. County health departments reported one clerk to 3 nurses, nonofficial agencies one to 6, municipal health departments one to 9, and state health departments one to 12.

Median annual salaries for all clerical workers was $1,816 ranging from $1,676 for typists to $2,111 for a miscellaneous group, including office managers, statistical clerks, etc. Of the 1,414 positions in this group, 520 were classified as clerks for whom the median salary was $1,692.

LOCAL HEALTH DEPARTMENT SALARY STUDY

The June Journal (p. 867) reported that a sampling study of local health departments is under way including 126 jurisdictions serving populations between 50,000 and 250,000. Questionnaires were sent to the health officers of these areas requesting information on the salaries paid to various professional groups, number of positions filled, and number of vacancies. After half of the questionnaires had been returned it became evident that the sample would not be large enough to assure statistical reliability. Reason: in most of the health departments there are many more vacancies than had been expected when the study was planned.

It was therefore decided to increase the sample to 100 per cent, covering all health departments in the population groups mentioned. Two hundred and sixty additional questionnaires are being mailed. It is expected that the results of the study will be available in the fall of 1948.

WESTCHESTER COUNTY MEDICAL SOCIETY RESOLUTION

The Westchester County Medical Society presented to the May meeting of the House of Delegates of the New York State Medical Society the following resolution on salary scales for public health physicians which was unanimously approved by the House of Delegates and referred to the Council for action:

WHEREAS: The health and welfare of the State of New York are dependent in many ways upon the satisfactory operation and performance of services provided through the New York State Department of Health, and

WHEREAS: Upon investigation it is evident that these services are suffering from a lack of essential medical personnel, and

WHEREAS: The Commissioner of Health is handicapped in making replacements of highly important specialists because of inadequate salary scales, and

WHEREAS: Present available salaries for public health and laboratory physicians in the State Department of Health are not com-

mensurate with incomes earned by physicians of like experience and training, and

WHEREAS: 48 out of 96 full-time medical positions in the State Department of Health remain unfilled as a result of the low salary scales now in effect, and

WHEREAS: Important public health programs and necessary research cannot be carried on because of these conditions, and

WHEREAS: These deficiencies threaten the health and welfare of the people of New York State, now therefore be it

RESOLVED: That the Medical Society of the State of New York respectfully petition the Governor of New York to take prompt action to rectify this situation by means of:

1. Upward salary scale revision.
2. The delegation of greater latitude to the Commissioner of Health to permit recruitment of personnel above salary scale minimums.
3. The simplification of civil service recruitment procedures as they pertain to medical personnel.

This resolution has added significance when it is remembered that New York is among the three or four states with the highest public health salaries in the country.

Sanitarian In-Service Training—Los Angeles County

The Bureau of Sanitation of the Los Angeles County Health Department has inaugurated an in-service training program for sanitarians. Classroom instruction amounts to 3½ hours per week. The classes are designed to continue over a period of 7 months. The list of subjects covered is comprehensive in the field of environmental sanitation. In addition, such general topics as public health administration, public health statistics and epidemiology, and public health laws and law enforcement will be covered. Roy O. Gilbert, M.D., is the Health Officer of the Los Angeles County Health Department.

Public Health in Foreign Periodicals

GEORGE ROSEN, M.D., PH.D.

BEFORE World War II, the level of public health organization and effectiveness in Germany was comparable to that found in other countries of Western Europe or in the United States. One of the chief differences in organization as compared with such countries as Great Britain or the United States was the high degree of centralization in the German system. Apart from the changes in scope and structure resulting from the injection of political and racial ideologies, the functions performed by the German public health authorities were, on the whole, like those of our own.

The end of the war found the German public health system in a state of almost complete administrative disintegration. In the three years that have elapsed since then steps have been taken to reconstitute the administrative agencies necessary for effective public health work. Nevertheless, the political, economic, and social constellation has not been particularly favorable. The state of affairs is perhaps best described by the statement of an eminent German physician: "The average level of the health services in this country is already far below that which the older generation can still remember as having existed in times of even moderate prosperity."[1] Evidence is available, however, that strenuous efforts are being made to remedy this situation. A review of articles published in the *Ärztliche Wochenschrift* during the past six months reveals an awareness of pressing needs, a desire to evaluate and make use of whatever data are available, and a recognition that there is much to be learned from public health practice in other countries.

PUBLIC HEALTH PROBLEMS

These trends are well exemplified in a paper by Otto Buurman surveying the public health needs and problems of present-day Germany.[2] These fall under three main heads: administration and personnel, control of communicable diseases, and nutrition.

Administrative reconstruction is hampered by the lack of uniformity resulting from the present zonal organization. Furthermore, within each state, the problem of centralization versus decentralization still remains to be solved. Buurman points out, for instance, that the central public health agency in the Soviet zone is actively rebuilding the necessary administrative organization, but that not infrequently this occurs in terms of a standpoint at variance with that which prevails in the British zone. For this reason, he strongly urges an interzonal exchange of ideas which will make possible uniformity of action in communicable disease control and other urgent health problems.

Effective action in dealing with these urgent matters is also handicapped by lack of adequately trained personnel. At the beginning of the war, medical education was accelerated and curtailed to provide the doctors and other personnel required for military purposes. With the prolongation of the war, further curtailment was found necessary. As a result, by the time the war ended a considerable deterioration in the quality of the German medical personnel had occurred. Buurman points up the urgent

need for repairing this damage, and insists that all physicians be given adequate training in bacteriological methods. In this connection, he states that other countries, particularly the United States, have left Germany far behind in this field. Such training is badly needed to control diseases such as typhoid fever, dysentery, diphtheria, and tuberculosis which are widely prevalent. Hand in hand with the training of personnel must go the creation of public health laboratories.

Problems of nutrition require urgent attention. Formerly German public health officials were concerned chiefly with food sanitation. Now, the advances made in the science of nutrition must be applied to benefit the German people. Here Buurman cites the technical excellence of the American food industry. In view of the close relation between nutritional status and resistance to disease, this author feels strongly that attention to problems of nutrition will go a long way in dealing with prevalent communicable diseases, particularly tuberculosis.

TYPHOID FEVER IN BERLIN

Study of the current German literature reveals that the problems presented above are seen in correct perspective. An instance in point is a report by Anders on typhoid fever in Berlin during the winter of 1946–1947.[3] Typhoid fever has been endemic in Germany, between 3,000 and 6,000 cases occurring annually. Prior to the outbreak of the war, the number of cases in general tended to decline. Since 1939, however, the incidence of typhoid has been on the increase. During the war large-scale epidemics occurred, for instance, in Schleswig-Holstein and Hamburg.

In 1945 there was a large outbreak with about 15,000 cases in Berlin, but even after it was over a strikingly high number of fresh cases continued to be reported during 1946. In June, 1946, there were 208 cases, in July 197, and in August 230, as compared with 151 reported cases in Berlin for the entire year of 1938. For a time it seemed that typhoid fever would become endemic in Berlin. To combat this situation a typhoid control campaign was organized in October, 1946, by the State Health Office.

The campaign lasted from October, 1946, to May, 1947, at which time all the districts of Berlin except four had been encompassed. The chief purpose of the campaign was to discover hitherto unknown typhoid carriers, and to check known carriers. Every reported case of typhoid was thoroughly checked to determine the source in the patient's environment. Diagnostic methods employed were examination of stool, urine, and bile, as well as examination of the blood for Vi-agglutination. In all, a total of 56 previously unknown carriers was found.

In his comments the author points out that certain sections of Berlin, which he calls " typhoid districts " are of particular concern to the health authorities. Living under indescribable hygienic and social conditions, the residents of these areas do not coöperate with the public health officers, and represent a threat to the city. Anders also calls attention to the defective training of many of the physicians in the typhoid wards of the hospitals, but adds that measures were taken to provide postgraduate lectures and demonstrations on typhoid fever. Shortly after the beginning of the campaign, the number of reported cases began to drop considerably. It is the author's opinion that, in addition to the seasonal and epidemiological factors involved, the drop in the reported cases was significantly influenced by the campaign against carriers.

VENEREAL DISEASE IN HAMBURG

The usual venereal diseases occur in Germany, but since 1940 little detailed

information on the incidence and prevalence of these conditions has been made available. For this reason the data provided by Hopf and Wennecke for Hamburg are of considerable interest.[4] These authors state that while the impression has existed since 1939, in private and clinic practice, of an increase of the venereal diseases, such a rise was not numerically demonstrable for Hamburg. Recognizing the necessity of establishing as precisely as possible the magnitude of the venereal disease problem, the Hamburg Health Department decided to carry out on August 20, 1946, an enumeration of all venereal disease patients under treatment on that day. The interest of practitioners was secured by informing them that this enumeration would serve as a basis for medicament procurement.

As a result, 5,064 patients were enumerated. Among these, 3,569 patients (72 per cent) were being treated for gonorrhea, and 1,379 (28 per cent) for syphilis (in various stages). There were 322 cases of primary lues, and 633 in the secondary stage. Of interest is the apparent relative increase in syphilis. Formerly, in Hamburg, lues accounted for 17 to 20 per cent of venereal disease while it now amounts to 25 to 30 per cent.

It had previously been estimated that there were 12,000 new cases annually in Hamburg. On the basis of the enumerated cases reported by Hopf and Wennecke, it was calculated that there is probably a minimum of 15,000 new infections annually. As the present population of Hamburg is 1.4 million, the estimated number of new infections represents an average annual increase of 1 per cent. In 1919 this percentual increase had been calculated at 3 per cent, and for the period from 1927 to 1934 at from 1½ to 1 per cent. Consequently the authors conclude that while an increase in the incidence of the venereal diseases has occurred, the situation in Hamburg is not particularly unfavorable.

DIPHTHERIA IN THE OBERBARNIM DISTRICT, 1942–1944

As in many other countries, German physicians are now evaluating the experiences of the war years. H. Malchin reports on the influence of diphtheria immunization on the epidemiological and clinical picture of diphtheria in the Oberbarnim District northeast of Berlin.[5]

Before the war diphtheria was already one of the major health problems. However, the incidence of diphtheria in various sections of the Reich varied greatly. During the 1920's and 1930's the course of diphtheria in Germany exhibits periodic fluctuations with epidemic peaks around 1917–1918, 1928–1929, and 1935–1937. The magnitude of the problem may be envisaged from the fact that the number of cases rose from 30,000 in 1926 to 293,000 in 1943. This increase was particularly marked after 1940, and was no doubt favored and facilitated by the large population movements of the war years. Furthermore, in 1942, an apparent change occurred in the clinical character of the disease. Toxic cases became more common, and the fatality rose. On the basis of these observations the health authorities of the Oberbarnim District, in March, 1942, decided to undertake a campaign of diphtheria immunization. This was done before any general policy had been established, and before any of the neighboring districts began to immunize.

The Oberbarnim District contained a population of 90,000. Of these, 19,000 were children ranging in age from 1 to 14 years; 92.08 per cent of the children received two injections of alum-precipitated toxoid. There was a drop in the number of cases among children, while cases among adults continued to rise. Cases did occur among immunized

children, but clinically these were mild. During the second half of 1944 there was a gradual rise in morbidity among the children who had been immunized. In view of this development, it was decided to Schick test all immunized children between the ages of 3 and 9 in the Oberbarnim District. This study included children from urban and rural environments. The testing began in the late summer of 1944, but had to be prematurely discontinued owing to the terminal events of the war. While admitting that his data were too small for definite conclusions, Malchin points out certain interesting observations. He reports that the percentage of urban children found to be Schick-positive was much higher than for the rural children, and attributes this to the better nutrition of the latter group.

MALARIA IN GERMANY

Interest in malaria has increased in Germany since the end of the war. In a recent article, Weyer discusses the present situation.[6] Owing to a lack of exact statistical data there is considerable confusion regarding the origin, number, and significance of malaria cases in Germany at present. Weyer refers to the existence of endemic malaria in the Emden area, but states that by 1945 it had practically disappeared.

Nevertheless, since the end of the war the malaria situation in Germany has become worse owing to the development of autochthonous malaria in various areas. Malaria cases have appeared in Schleswig-Holstein, Lower Saxony, in the Rhineland, in Northern Württemberg, in the neighborhood of Karlsruhe, and in Mecklenburg, Pomerania, and Saxony. In 1946, through July, 662 cases were reported in Berlin, of which 220 were considered as having been acquired in the city. In 1947, Hohenner reported on 200 cases treated in Frankfurt a.d. Oder, of which 197 were newly acquired. In 1946, in Schleswig-Holstein there were 470 cases; 119 were autochthonous. This malaria has been imported by returning German nationals who had acquired the infection abroad. In view of this situation, Weyer raises the question as to the probable future development of malaria in Germany.

The further existence and spread of malaria would require a sufficient number of infected humans, transmitting anophelines, and susceptibles. In addition, suitable environmental conditions are necessary. The considerable number of autochthonous cases indicates that these prerequisites are available in numerous localities. Yet it is extraordinarily difficult to make an epidemiological prognosis on the basis of the available information. The mosquito factor requires further study. Weyer believes that there are now more mosquitoes than before the war, especially in the cities, where they are able to breed more freely due to the destruction. Finally, the factor of climate must be studied. This factor would seem to be relatively unfavorable to mosquito development in Germany.

For the control of malaria and its epidemiological development, Weyer proposes constant supervision by the health authorities, intensive treatment of all malarious persons, control of mosquitoes by chemical means, and education of the public.

ORGANIZATION OF HEALTH AGENCIES

In order to deal with the problems discussed above, various semi-official health agencies have been organized. In 1947, organizations were created in Lower Saxony to combat venereal diseases and tuberculosis.[7] Their chief purpose is to carry on health education in these fields.

REFERENCES

1. Von Weizsäcker, V. *Der Begriff der allgemeinen Medizin* [Beiträge aus der allgemeinen Medizin, Heft 1] Stuttgart, Ferdinand Enke Verlag, 1947, p. 2.

2. Buurman, O. Gedanken über Aufgaben und Organisation moderner Gesundheitsabteilungen in Länderregierungen, *Ärztliche Wochenschrift* ½:1045–1054, 1947.

3. Anders, W. Die Typhussonderaktion in Gross-Berlin im Winter 1946/47, *Ärztliche Wochenschrift* ½:1073–1076, 1947.

4. Hopf, G., and Wennecke, W. Die Zahlenmässige Entwicklung der venerischen Krankheiten in Hamburg. *Ärztliche Wochenschrift* ½:983–985, 1947.

5. Malchin, H. Einflüsse der aktiven Diphtherie-Schutzimpfung auf das epidemiologische und klinische Bild der Diphtherie im Kreise Oberbarnim in den Jahren 1942 bis 1944, *Ärztliche Wochenschrift* 3:152–157, 1948.

6. Weyer, F. Bemerkungen zur gegenwärtigen Malarialage in Deutschland. *Ärztliche Wochenschrift* 3:56–59, 1948.

7. Tagesgeschichte, *Ärztliche Wochenschrift* ½: 1024, 1947.

BOOKS AND REPORTS

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted. All books reviewed in these columns may be purchased through the Book Service.

The Neighborhood Unit Plan—Its Spread and Acceptance—*Compiled by James Dahir. New York: Russell Sage Foundation,* 1947. 91 pp. Price, $1.00.

This selective bibliography with its interpretive comments is an important contribution to the urgent problems of city planning and urban housing in the years ahead. The subject presented, however, is broader and more fundamental to future family life than is indicated by the title.

The report should be of interest to lay and professional leaders alike, since it proposes an intelligent decentralization of all physical, governmental, social, recreational, and educational facilities in the interest of happy democratic living. The author marshalls an important array of evidence in support of the need of neighborhood planning and analysis, and interprets the material well. His method of presenting the references, illustrating the dramatic shifts in urban development, and building pictures from these authoritative sources, is unique and effective. The report serves a further useful purpose in bringing together in understandable fashion the varied experiences in neighborhood unit planning up to now and some of the obstacles to be overcome. The last two chapters especially, which deal with American plans and projects and the neighborhood unit abroad, give an excellent view of new units in the making.

However, while the arguments are convincing, we need a better picture of how its development is to be accomplished; how long it will take; how it will work; and how it will build to its conclusion. How the obstacles are to be overcome might well be the subject of a later publication.

KENNETH D. WIDDEMER

A New Approach to Nutrition Services in State Health Departments—*1946 Conference of the Milbank Memorial Fund. New York: Milbank Memorial Fund,* 1947. 108 pp. Price, $.75.

This compilation of papers, presented at the Round Table on Nutrition and Public Health, 1946 Conference of the Milbank Memorial Fund, deals with a subject of vital interest in public health. The experience and the vision of individuals prominent in public health and in the field of nutrition have been brought together in this volume to point a way for long needed direction to nutrition programs. It is suggested that the nutrition division in state health de-

partments needs at its head, a physician with special training in nutrition "to bring it to the necessary breadth of view." The functions of all health workers in the field of nutrition are thoughtfully discussed, and consideration is given to the needs of various population groups, such as industrial, maternal and infancy, and the school child. The record of the discussion is important, for, as is usual, the participants offered valuable suggestions in discussion which might never have been included in a prepared paper.

HAROLD R. SANDSTEAD

America's Needs and Resources—A Twentieth Century Fund Survey Which Includes Estimates for 1950 and 1960—*By J. Frederic Dewhurst and Associates. New York: Twentieth Century Fund,* 1947. 812 pp. Price, $5.00.

This volume is an ambitious survey of the major economic and social trends in the United States, and on the basis of these it attempts to estimate the country's needs for 1950 and 1960, as well as the resources available to meet them. The project was broad in scope and required the efforts of a large group of experts in the various fields which the book covers.

The trustees and officers of the Twentieth Century Fund were well aware of the difficulties of a project of this kind at a time when world conditions were so unsettled as to make forecasts of any kind rather hazardous. Nevertheless, they had the courage to attempt to meet an important need of the times. Their purpose is well expressed in the Foreword by Evans Clark, Executive Director of the Fund. He says, "In authorizing and underwriting this survey the Trustees of the Fund have hoped to provide those who work and plan in each separate field, as well as those whose concern is the economy as a whole, with the bench marks essential to any intelligent planning or appraisal. It is the Fund's hope that the educator, the clothing manufacturer, the cattleman, the wheat farmer, the Federal Reserve Board member, the labor unionist, the senator from this state or that, the president himself, as well as the average citizen who wants to know what this economy of ours is all about—that each of them can find in this volume some of the basic facts he needs to do his job more intelligently—and therefore more effectively."

Although no direct comparison was intended, this volume brings together and interprets masses of statistical material on economic and social trends similar to those embodied in the volumes *Recent Economic Changes in the United States,* published in 1929, and *Recent Social Trends in the United States,* published in 1933. It departs from these earlier projects in that a program of policies based upon the findings is avoided.

The book covers in some detail the facts on population trends; national income, expenditures and savings; consumer spending patterns and trends in terms of the major categories of consumption; capital needs and demands as well as capital formation; and government expenditures and their impact on the economy. In the discussion of capital requirements due attention is given to the needs arising from urban development and rural and regional development. The section dealing with resources and capacities considers both the human and natural resources as well as both our agricultural capacity and industrial capacity. Dealing as the volume does with the problems of the whole nation, it leans heavily on the statistical resources of many government agencies, and in fact, many of the contributions come from workers in these agencies. Throughout the volume one finds emphasis on the impact of the

war and more particularly how our sights were raised in many directions on the economic plane as a result of our amazing record of war production.

This book will be a valuable source of factual data for many years to come. It is liberally documented with numerous tables and charts both in the text and in the appendices.

Unfortunately world conditions have continued so unsettled and political and social trends have continued to vary so much from their pre-war pattern that many of the projections for 1950 made on the assumptions of two years ago will require considerable modification. For example, currently proposed military expenditures are much higher than were anticipated in this volume. This holds true also of our contributions for foreign reconstruction and restoration. Housing programs have fallen short for several reasons, such as the hesitancy on the part of private enterprise because of mounting construction costs and the lack of a consistent public housing policy. In the field of population, the projected figures are taken from the 1943 estimates of Thompson and Whelpton. The post-war birth rate has continued at a level much higher than was anticipated in these estimates, and immigration and repatriation of our citizens has further swelled the population. The effects of this unexpectedly large gain in population will be felt in many fields such as consumer demands and requirements, family life, education, and housing.

Of special interest to readers of this *Journal* is the chapter on Medical Care which was written by Margaret C. Klem and Helen Hollingsworth of the Bureau of Research and Statistics of the Social Security Administration. This chapter contains a wealth of statistical information on personnel and facilities for medical care, their number and distribution, incomes of the various professional groups in the medical and health field, sources of hospital income, the major trends in health, medical care in relation to income and other factors, government expenditures for health, and prospective trends in the medical care field, particularly in relation to the future role of government. It is no fault of the authors that a good part of the literature in the field is relatively old, but they might have warned readers as to the limitations of the available data. Perhaps more should have been said with respect to the magnificent accomplishments in public health, especially the fine record made during the war years in the face of difficult conditions. In the matter of Selective Service findings, the authors accept rather lugubrious views which are far from justified.

In some respects the point of view in this chapter on Medical Care is not as objective as one would have liked to see it. Inevitably the authors of this chapter have been influenced by their official work and connections, but one cannot avoid the feeling that there is too much special pleading for the adoption of compulsory health insurance plans. Little notice is taken of the extension of medical group practice, of the extraordinary growth of private insurance plans covering hospitalization and medical care, of the marked increase in research in the field of cancer, heart disease, and other so-called degenerative diseases, which conditions will weigh heavily in the medical care needs of the future.

LOUIS I. DUBLIN

Child Care and Training—*By Marion L. Faegre and John E. Anderson. (7th. ed.). Minneapolis, Minn.: University of Minnesota Press*, 1947. 310 pp. Price, $3.25.

In the seventh edition of this well known book the original plan has not been changed but the material has been brought up to date. This book de-

veloped out of the extension courses of the Institute of Child Welfare of the University of Minnesota. It is a sound and practical guide for study groups.

This book is also appropriate for individual parents. Three of the first chapters on the physical aspects of growth, including how children grow, general care, and children's diseases, are weak as compared with the rest of the text. The section on nutrition contains generalizations and suggestions which might be questioned. The section on height and weight has not been changed since the first editions of the book. The results of more recent studies on the measurement of growth and nutritional status could well have been mentioned.

The discussions on discipline, development and curiosity, social and mental development, emotional behavior, play, and the role of the family are particularly good and are concerned with children from infancy through high school. The chapter on sleep is to be recommended, as the authors recognize the importance of individual variations in sleep patterns and report the behavior and observations of large numbers of children.

The book contains an up-to-date bibliography on books dealing with the development and training of children, lists of toys and play material, and a number of reading lists for children.

RUTH RAATAMA

Factors Regulating Blood Pressure. *Transactions of the First Conference April 24–25, 1947, New York, N. Y. New York: Josiah Macy, Jr., Foundation.* 175 pp. Price, $1.90.

In accordance with one of its established policies, the Josiah Macy Jr., Foundation has inaugurated a series of conferences on *Factors Regulating Blood Pressure.* This monograph is a record of the initial meeting which took place April 24–25, 1947.

It contains the text of 12 short introductory papers followed by a general informal discussion directly recorded at the time of the conference.

Members of the conference were selected on the basis of their past and continuing research interest in problems of the circulation. The papers represent original unpublished studies and elaborations of published data.

The papers cover a wide area, including discussions of the relation of the nervous system to hypertension, humoral factors in the pathogenesis of experimental and human hypertension, quantitative measurements of renal function, the prophylaxis of experimental hypertension and the treatment of human hypertension with low salt diets, low protein diets, renal extracts, tyrosinase, and quinones.

These studies bring up to recent date the wide variety of problems under discussion.

Especially valuable is the general informal discussion in which opposing points of view are freely expressed.

This monograph is highly instructive. It contains factual data and opinions of seasoned investigators which should be of considerable value to students of the circulation. WILLIAM GOLDRING

The Blowflies of North America —*By David G. Hall, Baltimore, Md.: Monumental Printing Company, The Thomas Say Foundation, Entomological Society of America,* 1948. 477 pp. Price, $6.50.

Health officers, physicians, sanitary engineers, food inspectors, veterinarians, entomologists, nurses, in fact all those in any way concerned with preventive medicine will welcome the appearance of this excellent monographic treatment of a group of insects so important from a medical and veterinary point of view. In almost every quarter of the globe blowflies are in ill repute. True, they serve a useful purpose in helping to dispose of dead animal matter and in

cleaning up necrotic wounds. Many of them, however, are prone to leave animal carcasses and excreta and proceed with their germ-laden feet and mouth parts to contaminate fresh wounds or food.

Although this work is primarily systematic, the author follows the few pages on the history of classification of the blowflies with concise accounts of the part they play in the transmission of disease and the causation of myiasis. Up-to-date information on method of controlling blowflies is summarized in nine pages, and methods of collecting as well as preserving specimens are outlined.

The author has grouped the blowflies (family *Calliphoridae*) into 5 subfamilies. Under each sub-family, keys are given to genera and species. Several new genera and many new species are described. The keys and text are very conveniently arranged. The discussion of each species includes synonymy, description of each of the stages of the more important flies, brief description of others, distribution, biology, habits, and economic importance. The summation of information on the biology and distribution is especially useful.

Those who have been grappling with blowfly problems for a number of years and have gathered a speaking or reading acquaintance with several of the scientific names of the species of medical importance will doubtless be much disturbed and perhaps disgusted to find so many of the old familiar handles replaced by new and not always euphonious ones. For instance, *Cynomyia cadaverina* becomes *Cynomyopsis cadaverina* and the "i" is knocked out of *Cynomyia*. When that generic name is used, *Lucilia sericata,* the common greenbottle fly becomes *Phaenicia;* the screwworm, *Cochliomyia americana* becomes *Callitroga americana;* and the false screwworm *Cochliomyia macellaria* also assumes *Callitroga* as a generic name, which from a pronunciation viewpoint we must admit is an improvement. Well, we know the desirability of following the approved rules of zoölogical nomenclature and we therefore bow in acceptance and just hope these new names and combinations are not soon changed again.

The volume is well and attractively bound in blue buckram with gold lettering. The paper is of excellent quality and the typography distinctly above the average. A well selected list of bibliographical reference is included. The index is excellent from the standpoint of valid names and synonyms, but reference to other information might have been more complete.

An examination of the 5 colored plates of flies and the 46 black and white drawings of heads, wings, and genitalia of adults, and principal structures of the larvae will convince the reader that the author is an artist as well as an entomologist. By the aid of these drawings and descriptions many who are not trained entomologists should be able to identify a number of the species of larvae involved in cases of myiasis. Accurate records of such cases are so desirable, however, that it would be well to send specimens to the U. S. National Museum for verification of identity.

Every medical library should have this valuable publication and every worker in the field of preventive medicine will find it a useful working tool.

FRED C. BISHOPP

American Building: The Forces That Shape It—*By J. M. Fitch. Boston: Houghton Mifflin,* 1948. 382 pp. Price, $5.00.

James Emerson Fitch is an architect and planner of wide experience (including service with the T.V.A. and the Federal Housing Administration) and at present technical editor of the

Architectural Forum. He has written a book which will be of interest to the increasing number of members of our profession who realize that housing must be one of the central issues in the public health of the future.

Irrespective of any practical applications, this volume has much that will be of interest to the general reader. It is fascinating to follow the history of building from colonial days to prefabrication, to note the influence of technological factors—such as the sawmill and the brick kiln, the Franklin stove, the "Golden Leap" toward the control of space made in the construction of the Crystal Palace, the Brooklyn Bridge and the Eiffel Tower, the development of steel and of the welding process—upon structural possibilities. It is illuminating to trace the influence of men's ideals upon architecture to see how the Greek temple reflected the philosophy of Athens, the Gothic cathedral, the aspirations of the medieval church, and the functionalism of today, the empirical spirit of modern science. The series of plates, which include 177 individual pictures, are illuminating to the text and, in some cases, breath-taking in their beauty.

Mr. Fitch is intensely alive to the exciting possibilities of the newest advances of science and technology in the housing field; and allows himself even the luxury of such flights of fancy as the following: "To-morrow's sunlight will not enter to-morrow's buildings through holes punched in solid walls; rather it will be absorbed by the entire building, there to be filtered and mixed in the right proportions with artificial light to form a synthetic environment designed to our specifications. To-morrow's buildings may open and close automatically with the sun, like morning-glories; or, like sunflowers revolve slowly to keep their faces toward the sun."

Above all, this author is intensely conscious of the broad social purposes of housing and planning; and it is this emphasis which will be most appealing to the student of public health. We can accept to the full his statement that "the function of American building must be the maintenance of those optimal environmental conditions essential to the health and happiness of the individual and to the peaceful and efficient development of American society." C.-E. A. WINSLOW

Give Your Child a Chance—*By Lenore Turner. New York: Georgian Press,* 1948. 170 pp. Price, $1.50.

This is a genuine effort on behalf of children. The author speaks directly and simply to mothers about the hundreds of everyday matters that come up in the life of infants and young children. She knows the mother's practical problems and also her fears and uncertainties. She tries to get the mother to understand the child's needs and feelings, and to relax while carrying out her program—avoiding tensions for both mother and child.

The book is readable and helpful and full of examples that make the teaching real. The contents cover the main problems that confused or anxious mothers ask questions about—management, fears, nervousness, and "bad habits," sex education, toilet training. The chapter on feeding is the longest in the book, but a good part of it has to do with the parent's attitude toward food and feeding, with recognizing the child's needs, the idea of letting the child indicate when he is hungry and when he has had enough, with changing diet and program, with getting the child to feed himself. That is, this chapter on feeding is in keeping with the entire book—guiding the child's emotional development is the central theme.

The book is addressed to fathers as well as to mothers. The discussion of

nursery schools and day nurseries tells the reader what to look out for, what to expect, and what choices one has to make. There is a usable index—that with one footnote reference represents the only concessions to the appearance of scholarship. Perhaps a few additional references to other useful books for those who will want to know more could have been included. But this is an excellent book that can be recommended without reservation. And it is a gratifying demonstration that people can be helped toward understanding and sound attitudes rather than be left to depend upon formal rules for meeting daily situations.

SIDONIE MATSNER GRUENBERG

Bacteriology — A Textbook of Microorganisms—*By F. W. Tanner and F. W. Tanner, Jr. (4th ed.). New York: Wiley,* 1948. 625 pp. Price, $4.50.

In their preface the authors state that this is a textbook intended for those who are studying bacteriology for the first time, and the objective is to allow the student to build his structure on a broad biological basis of fundamental principles. This statement describes the book and its scope of usefulness.

In keeping with the expressed intent, nearly half of the book is devoted to the biology of bacteria, including their classification and relation to their environment. The applications of bacteriology that concern human welfare are treated in a general way and in orderly sequence.

The book presents several departures from the usual textbook treatment of bacteriology in that there is no consideration of individual bacterial species, and the etiological relationships of bacteria to human and plant diseases are presented in tabular form. More detailed considerations are left for subsequent advanced courses.

Discussions of culture media and methods, and of staining and other techniques, are omitted with the obvious intent to supply them from laboratory manuals. The teacher's attitude toward these omissions and condensations will depend on his approach to the subject. This book was designed for teaching in undergraduate college classes, not in medical schools. Considered from the viewpoint of its expressed purpose, of presenting bacteriology as biology, this reviewer likes it.

The text is well written and very readable, and the book is well made up by the publishers. Especially noteworthy are the sketches, in Chapter 1, of scientists prominent in developing bacteriology. The glossary of terms and literature citations should be useful.

JAMES E. FULLER

Canned Food Reference Manual. *(3rd ed.) New York: American Can Company, Research Division,* 1947. 638 pp.

Although the first edition of this volume was published only 8 years ago, in 1939, with a second edition in 1943, the numerous improvements and changes that occurred in commercial canning methods during the war made a third edition seem necessary. It presents the story of commercial canning from a general discussion of food preservation to a description of the commercial process. A general discussion of nutrition—what good nutrition is, what foods are necessary, what common nutritional inadequacies are, recommended dietary practices, and the nutritive value of commercially canned foods—and a review of regulations with specific reference to the Food, Drug and Cosmetic Act of 1938, complete the textual matter. A considerable portion of the volume is given over to an appendix consisting of numerous tables, giving the composition and nutritive value of the components of com-

mercially canned foods. A bibliography is also included. FRANCIS B. ELDER

Comparative Physiology — *By Bradley T. Scheer, Ph.D. New York: Wiley,* 1948. 563 pp. Price, $6.00.

This is a new textbook intended for use in an advanced university course in comparative physiology. The author feels that comparative physiology should take its place beside comparative anatomy in the curriculum, since it serves to introduce basic principles by examining and interpreting variations in function in a wide variety of animal types.

The book represents a departure from previous texts in comparative physiology in that each chapter takes up the functional systems in a definite order for a single phylum. This arrangement makes it possible to compare functions in closely related organisms. A summary at the end of each chapter stresses the evolution in function within the phylum and the relations to other phyla.

The first chapter is devoted to a summary of fundamental physiological processes. To present this material in an abbreviated form without sacrificing accuracy is a difficult task. The author has done particularly well with it. The book is well documented throughout, numerous references in each section to original sources being readily available in footnotes. The great wealth of material presented and the arrangement of the material should attract the interest of physiologists and advanced students in zoölogy. C. W. HAMPEL

Legal Aspects of Milk Sanitation —*By James A. Tobey, Dr.P.H., LL.D. (2nd ed.). Washington: Milk Industry Foundation,* 1947. 133 pp. Price, $5.00.

The first edition of this book, published in 1936, listed and interpreted over 300 court decisions relating directly to milk control with pertinent discussion and quotations from judicial opinions. The present revision brings the work up to date, including about 100 additional decisions that have been handed down since 1936 and other new material. It is concerned primarily with public health control of milk and milk products. The legal aspects of price fixing are not covered except by a brief review of decisions handed down by the United States Supreme Court.

The purpose of the book is given in the preface as "an attempt to restate in lucid terms the constitutional, administrative, public, and private law in this country as it has been and is being applied to the production, handling, processing, distribution, and sale of milk and dairy products. The book is not intended as a substitute for an attorney, but as a practical guide to the established law on this important subject. For this purpose it has been extensively documented, so that those who are faced with specific problems may have sources of further information."

With many years of experience in this field and unusual ability as a writer, the author has fulfilled the above purpose admirably. The text is concise but is adequate for a general understanding of the law on all aspects of milk control. Case references are given page by page in footnote citations and also at the end of the book in a table of cases arranged according to states. A good general bibliography and an adequate index are included.

Although written primarily as a source of information for the milk industry, this book is equally suitable for the use of health officers and others who must deal with the administration and enforcement of milk sanitation regulations. Although not very strongly bound, the book is well printed, conveniently arranged, and otherwise of satisfactory format. ROY J. MORTON

BOOKS RECEIVED

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

COMMUNICABLE DISEASES. Nina D. Gage, R.N., and John Fitch Landon, A.B.,M.D. (5th ed.). Philadelphia: F. A. Davis, 1948. 541 pp. Price, $4.00.

THE DIABETIC'S HANDBOOK. Anthony M. Sindoni, Jr., M.D. New York: Ronald Press, 1948. 194 pp. Price, $3.00.

DIAGNOSTIC PROCEDURES FOR VIRUS AND RICKETTSIAL DISEASES. Thomas Francis, Jr., M.D., Chairman, Committee on Diagnostic Procedures for Virus and Rickettsial Diseases. New York: American Public Health Association, 1948. 347 pp. Price, $4.00.

DIE LUNGENTUBERKULOSE BEIM ERWACHSENEN. Klinik and Therapie Fur Die Praxis. Hermann Weber, M.D. New York: Gruen & Stratton, 1948. 417 pp.

THE ENGAGED COUPLE HAS A RIGHT TO KNOW (A Modern Guide to Happy Marriage). Abner I. Weisman, M.D. New York: Renbayle House, 1948. 256 pp. Price, $3.00.

ENJOY YOUR CHILD—Ages 1, 2 and 3. James L. Hymes, Jr. New York: Public Affairs Committee, Pamphlet No. 141. 32 pp. Price, $.20.

ESSENTIALS OF ZOOLOGY. George Edwin Potter, Ph.D. (2d ed.). St. Louis: C. V. Mosby, 1948. 544 pp. Price, $4.00.

EVALUATING THE SERVICES OF THE NURSE. A Handbook for Staff Nurses and Supervisors. New York: Metropolitan Life Insurance Co., 1948. 54 pp.

HEALTH AND PHYSICAL EDUCATION FOR JUNIOR AND SENIOR HIGH SCHOOLS. David K. Brace. New York: A. S. Barnes and Co., 1948. 392 pp. Price, $4.00.

HEATING VENTILATING AIR CONDITIONING GUIDE 1948. Vol. 26. New York: American Society of Heating and Ventilating Engineers, 1948. 1280 pp. Price, $7.50.

HISTORY OF FACTORY AND MINE HYGIENE. Ludwig Teleky, M.D. New York: Columbia University Press, 1948. 342 pp. Price, $4.50.

INSECT PESTS. Wm. Clunie Harvey, M.D., D.P.H., and Harry Hill, F.R.San.I, F.S.I.A, A.M.I.S.E. (2d ed.). New York: Paul B. Hoeber, Inc., 1948. 347 pp. Price, $5.00.

INTRODUCTION TO HEALTH EDUCATION. Jackson R. Sharman. New York: A. S. Barnes and Co., 1948. 273 pp. Price, $3.00.

MEDICAL RESEARCH COUNCIL. Memorandum No. 18. Thyroid Enlargement and other Changes Related to the Mineral Content of Drinking Water (with a Note on Goitre Prophylaxis). Margaret M. Murray, J. A. Ryle, Beatrice W. Simpson, and Dagmar C. Wilson. London: His Majesty's Stationery Office, 1948. 39 pp. Ninepence net.

PHYSICAL EDUCATION: INTERPRETATIONS AND OBJECTIVES. Jay B. Nash, Ph.D. New York: A. S. Barnes and Co., 1948. 288 pp. Price, $3.00.

PRINCIPLES OF HEALTHFUL LIVING FOR THE INDIVIDUAL AND THE COMMUNITY. Edgar F. Van Buskirk, Ph.D., and Edited by Carl L. Kline, M.D. New York. The Dryden Press, 1948. 474 pp. Price, $3.50.

THE PSYCHOLOGY OF ABNORMAL BEHAVIOR. Louis P. Thorpe, Ph.D., and Barney Katz, Ph.D. New York: Ronald Press, 1948. 877 pp. Price, $6.00.

THE PSYCHOLOGICAL ORIGIN AND TREATMENT OF ENURESIS. Stevenson Smith, Ph.D., Seattle, Wash.: University of Washington Press, 1948. 70 pp. Price, $1.75.

THE PUBLIC WELFARE DIRECTORY 1948. Howard L. Russell, Editor. Chicago: American Public Welfare Association, 1948. 310 pp. Price, $1.80.

RECENT ADVANCES IN PUBLIC HEALTH. J. L. Burn, M.D.,D.Hy. D.P.H. London: J. & A. Churchill Ltd., 1947. 409 pp. Price, 25/s.

THE SALICYLATES: A Critical Bibliographic Review. Martin Gross, M.D., and Leon A. Greenberg, Ph.D. New Haven, Conn.: Hillhouse Press, 1948. 380 pp. Price, $6.00.

SAFETY FOR THE HOUSEHOLD. U. S. Department of Commerce. National Bureau of Standards. Washington, D. C.: Government Printing Office, 1948. 190 pp. Price, $.75.

SCIENTIFIC PERIODICALS IN THE NETHERLANDS. Compiled by A. Gorter. The Hague, Netherlands: Centrale Organisatie T.N.O., 1947. 36 pp. Price, $1.25.

SEX VARIANTS: A STUDY OF HOMOSEXUAL PATTERNS. George W. Henry, M.D. New York: Paul B. Hoeber, Inc., 1948. Price, $8.00.

SMOKE. The Problem of Coal and the Atmosphere. Arnold Marsh, M.Sc.Tech.,M.Inst.F. Cleveland: The Sherwood Press, 1948. 306 pp. Price, $7.00.

WORKBOOK FOR HEALTH IN YOUR DAILY LIV-

ING. Francis L. Bacon. Boston: Houghton Mifflin Co., 1948. 121 pp. Price, $.80.

YOUR SKIN AND ITS CARE. Howard T. Behrman, M.D., and Oscar L. Levin, M.D. New York: Emerson, 1948. 255 pp. Price, $2.50.

THE FOLLOWING REPORTS HAVE BEEN RECEIVED

AMERICAN CANCER SOCIETY. Annual Report 1947. New York: American Cancer Society, 102 pp.

ASSOCIATION OF AMERICAN RAILROADS. Technical Reports Nos. 3 and 4. Report on an Investigation into the Use of Railway Passenger Car Toilets and the Nature and Quantity of the Toilet Wastes. New York: Association of American Railroads, 1947.

CALIFORNIA PUBLIC HEALTH REPORT 1945–1947. San Francisco: State Department of Public Health. 187 pp.

CITY OF MONTREAL, CANADA. Ad. Groulx, M.P.H.,M.D. Report of the Department of Health, 1946. 329 pp.

DADE COUNTY DEPARTMENT OF HEALTH. Annual Report 1947. Miami, Fla.: Department of Health.

HARLEM COUNCIL ON SOCIAL HYGIENE, INC. Annual Report, 1947. New York: Harlem Council on Social Hygiene. 15 pp.

IT WAS 100 YEARS AGO LAST MAY. Annual Report of the Peoria City Health Department, 1947. Peoria, Ill.: Department of Health. 14 pp.

LIFE INSURANCE MEDICAL RESEARCH FUND. Third Annual Report, 1947. New York: Life Insurance Medical Research Fund. 95 pp.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE. Report on the Work of the School for the Year 1946–1947. London: University of London. 134 pp.

MARYLAND STATE DEPARTMENT OF HEALTH. Report of a Health Officer Committee on the Coördination of Preventive and Curative Services, 1948. 37 pp.

NATIONAL COMMITTEE FOR MENTAL HYGIENE, INC. Annual Report, 1947. New York: National Committee for Mental Hygiene, 1948. 48 pp.

PORTLAND, OREGON, CITY OF. Annual Report of Bureau of Health for 1946. Department of Finance. 71 pp.

QUEENSBORO TUBERCULOSIS AND HEALTH ASSOCIATION. 29th Annual Report April, 1947–March, 1948. Jamaica, New York: Queensboro Tuberculosis and Health Association.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Warmly Recommended Reading—Based, for a change, on realities a practical dental health plan for Baltimore children is set in motion. There should be some suggestions for you—if you have any concern whatever about the commonest of all physical defects—in this forward-looking move.

ANON. A Dental Care Program for Baltimore's School Children. Baltimore Health News 25, 5–6:26 (May-June), 1948.

Alcoholics Non-Industrious—Alcoholism is a very great public health problem, asserts this student who tells what industry might do about reclaiming its drunks during the two to ten years they take to progress from serious drinker to full-blown souse. The cost is $90 to $140 per lush reclaimed.

BACON, L. R. Alcoholism in Industry. Indust. Med. 17, 5:161 (May), 1948.

Strains of Influenza A—Vaccines, which were effective against earlier influenza outbreaks, failed to protect the vaccinated during the 1947 visitations, in so far as the experience of 13 industrial establishments goes. But, don't be too discouraged: probably we'll have more potent vaccines in the future, asserts the reporter.

BAETJER, A. M. Results of Influenza Vaccination in Industry During the 1947 Epidemic. Indust. Med. 17, 5:171 (May), 1948.

This Seems Reasonable—After a three year study, a commission concludes that influenza A and B are endemic infections which periodically erupt in epidemics. Between eruptions the virus is transferred from unrecognized case to unrecognized case.

COMMISSION ON ACUTE RESPIRATORY DISEASES, FORT BRAGG, N. C. Endemic Influenza. Am. J. Hyg. 47, 3:290 (May), 1948.

Go Slow, They Urge—Streptomycin cannot be considered a cure for tuberculosis at present, assert two Doubting Thomases. More controlled experiences are needed before accepting the drug as more than incompletely retardant of the infection in man. The paper's discussant seems to imply that the writers erected a sizable straw-man to bowl over.

CORPER, H. J. and COHN, M. L. Various Phases of the Use of Streptomycin in Tuberculosis. J. A. M. A. 137, 4:356 (May 22), 1948.

Rats Is Rats—For what it's worth to you, here is a statistic: a third of all roof rats of San Antonio carried typhus antibodies, while a half or more of the brown rats were positive.

DAVIS, D. E. Observation on Rats and Typhus Fever in San Antonio, Texas. Pub. Health Rep. 63, 21:783 (June 11), 1948.

"An Idea Whose Time Has Come"—Outlined in this useful paper is the plan for a rural-hospital-health-center to be created under the Hospital Construction Act. You had better familiarize yourself with this example of what can be done.

DAVIS, G. L. The Hospital as a Community Health Center. Pub. Health Nurs. 40, 6:311 (June), 1948.

"Study, Decision—and Action"—Don't miss this. The chairman and four participants discuss the National Health Assembly. We are due to hear about that gathering for months to come, but you'll profit by this early report.

EWING, O. R., *et al.* Essentials for National Health. Survey Midmonthly, 84, 6:185 (June), 1948.

Sanitizing Agents—One quote is offered on the chance it will tell you whether you will profit by reading the whole paper: "If the alkalinity of the detergent is sufficiently high to saponify fat, the resulting soap will inactivate the cationic quaternary ammonium compound with resultant loss in bactericidal activity."

GLASSMAN, H. N. Surface Active Agents and Their Application in Bacteriology. Bact. Rev. 12, 2:105 (June), 1948.

Carriers are Responsible—Polio virus leaves the patient through secretions of the mouth and nose and by the feces. Direct contact with infected persons rather than any widespread neighborhood factor is the usual source for the spread, these researchers conclude.

GORDON, F. B., *et al.* Laboratory Study of the Epidemiology of Poliomyelitis. J. Infect. Dis. 82, 3:294 (May-June), 1948.

"Serious Deficiencies Exist"—Having ascertained the needs, the Academy of Pediatrics, collaborating with the Public Health Service and the Children's Bureau, has embarked upon an ambitious attempt to better the distribution of child health services for *all* children. May they succeed beyond their most ambitious dreams!

HUBBARD, J. P., *et al.* Health Services for the Rural Child. J. A. M. A. 137, 4:337 (May 22), 1948.

What's a Cured Cancer Worth?—Cancer detection centers are an expensive undertaking, outside the realm of practicability for the average community. The National Cancer Institute has set up a demonstration unit at Hot Springs to see what parts can be salvaged from the idea that might be put to use locally.

KOPLIN, A. N. Objectives and Program of the Arkansas Cancer Detection Project. Pub.

Health Rep. 63, 25:813 (June 18), 1948.

Tampering With Personality—This you must read. It's about the nurse's contribution to mental health, but what the writer says to nurses applies equally to most of the rest of us. His introductory statements about the practicability and applicability and durability and clarity of ideas is not to be missed.

LEMKAU, P. V. What Can the Public Health Nurse Do in Mental Hygiene? Pub. Health Nurs. 40, 6:299 (June), 1948.

Good Samaritans Please Note—Blood donors recovered their hemoglobin, red cell, and serum protein levels quickest when their diets furnished 90 gm. of protein daily. One quart of milk, an egg, two servings of meat and one of cheese or legumes produced the 90—and a little gain in weight.

LEVERTON, R. M., *et al.* Blood Regeneration in Women Blood Donors. J. Am. Dietet. A. 24, 6:480 (June), 1948.

Artificial Respiration—Health workers with a yen for first aid will want this exhaustive report on "suck and blow" and other respirators, for their clipping files.

MOTLEY, H. L., *et al.* Intermittent Positive Pressure Breathing. J. A. M. A. 137, 4:370 (May 22), 1948.

"Needs Must When the Devil Drives"—On May 7, London commemorated the centenary of the appointment of Sir John Simon, first Medical Officer of Health for the city. You need the historical information in the story of his appointment. Fear of approaching cholera was the principal cause.

UNDERWOOD, E. A. The Centenary of British Public Health. Brit. M. J. No. 4557 p. 890 (May 8), 1948.

He's Against Wholesale Medication—Of the contacts of early syphilis cases brought in for examination, slightly less than half were found to be infected. The proposal that *all* contacts be treated seems unwise, in the face of these findings, says the writer.

VON WERSSOWETZ, A. J. The Incidence of Infection in Contacts of Early Syphilis. Ven. Dis. Inform. 29, 5:132 (May), 1948.

Greetings from the Public Health Association of Brazil

The American Public Health Association is in receipt of the following letter from Dr. Oswaldo L. da Costa, the Executive Secretary of the Sociedade Brasileira de Higiene of Rio de Janeiro. Through the columns of the *American Journal of Public Health* it is shared with North American colleagues to whom it is addressed.

"The Sociedade Brasileira de Higiene, a National Organization of Public Health workers, considers this opportunity very appropriate to address its North American colleagues through the American Public Health Association.

"The factors that determined the creation of our society are the same that prompt us now to send this message: Association of ideas and efforts for the progress of Public Health.

"The aims of all workers in the field of health protection are not limited by national boundaries and are free from individual or group prejudices.

"This assertion has more power and more truth for those who follow the new and successful road of the aptly called 'Good Neighbor Policy.'

"We want to add to the many facts that day by day are strengthening the approach of our governments and people this letter from the doctors, engineers, nurses and other affiliates of the Sociedade Brasileira de Higiene to the American Public Health Association.

"The American Public Health Association will surely make known to all its associates this message of friendship and hope for ever-increasing cooperation."

ASSOCIATION NEWS

SEVENTY-SIXTH ANNUAL MEETING
AMERICAN PUBLIC HEALTH ASSOCIATION
BOSTON, MASS., NOVEMBER 8–12, 1948

NOMINATIONS FOR THE GOVERNING COUNCIL

In accordance with the By-laws of the Association, the Nominating Committee for Governing Council Members consisting of one Fellow elected by each Section and a Chairman appointed by the Executive Board, reports the following nominations for the Governing Council. The Chairman of the Committee is George T. Palmer, Dr.P.H., Consultant in Public Health Administration with the California State Department of Public Health. The other members are: J. Lloyd Barron, Engineering Section; Samuel R. Berenberg, M.D., Maternal and Child Health Section; Frank C. Cady, D.D.S., Dental Health Section; Marion H. Douglas, R.N., Public Health Nursing Section; Marietta Eichelberger, Ph.D., Food and Nutrition Section; J. William Fehnel, Industrial Hygiene Section; Ruth E. Grout, Ph.D., School Health Section; Henry E. Meleney, M.D., Epidemiology Section; Lucy S. Morgan, Ph.D., Public Health Education Section; Hugo Muench, M.D., Vital Statistics Section; Thomas F. Sellers, M.D., Laboratory Section; and E. V. Thiehoff, M.D., Health Officers Section.

The By-laws provide that "upon the petition of twenty-five Fellows, the Nominating Committee shall add the name of any Fellow to the nominees selected by it, provided such petition is received not less than thirty days before the Annual Meeting."

The terms of ten elective Councilors will expire at the time of the Boston Annual Meeting. The ten nominees receiving the highest number of votes cast by the Fellows present and voting at the Annual Meeting will be declared elected to fill the three year term expiring in 1951.

Joseph C. Aub, M.D.
Massachusetts General Hospital
Boston, Mass.

Charles F. Blankenship, M.D.
U. S. Public Health Service
Chicago, Ill.

Ruth E. Boynton, M.D.
University of Minnesota
Minneapolis, Minn.

H. Trendley Dean, D.D.S.
National Institute of Health
Bethesda, Md.

Vivian Drenckhahn, M.S.
National Tuberculosis Association
New York, N. Y.

Marietta Eichelberger, Ph.D.
Evaporated Milk Association
Chicago, Ill.

Paul R. Ensign, M.D.
State Board of Health
Topeka, Kans.

Frederick W. Fabian, Ph.D.
Michigan State College
East Lansing, Mich.

Katherine Faville, R.N.
Wayne University
Detroit, Mich.

Roy F. Feemster, M.D.
State Department of Public Health
Boston, Mass.

Alfred H. Fletcher, M.S.
City Health Department
New York, N. Y.

John E. Gordon, M.D.
Harvard University
Boston, Mass.

Harold B. Gotaas, Sc.D.
University of California
Berkeley, Calif.

Ann W. Haynes, M.P.H.
State Department of Public Health
San Francisco, Calif.

Marjorie M. Heseltine, M.A.
Children's Bureau
Washington, D. C.

Benjamin G. Horning, M.D.
W. K. Kellogg Foundation
Battle Creek, Mich.

Edmund K. Kline, Dr.P.H.
Cattaraugus County Department of Health
Olean, N. Y.

Louise Knapp, R.N.
Washington University
St. Louis, Mo.

Guy G. Lunsford, M.D.
State Department of Public Health
Atlanta, Ga.

James E. Perkins, M.D.
National Tuberculosis Association
New York, N. Y.

Ruth R. Puffer, Dr.P.H.
State Health Department
Nashville, Tenn.

James S. Simmons, M.D.
Harvard University
Boston, Mass.

Dean F. Smiley, M.D.
American Medical Association
Chicago, Ill.

Eunice N. Tyler, Ph.D.
University of North Carolina
Chapel Hill, N. C.

Myron E. Wegman, M.D.
Louisiana State University
New Orleans, La.

PROGRESS IN THE MERIT SYSTEM SERVICE

The Merit System Service of the Association has more than tripled its output during the past year as is revealed in a recent report to the Executive Board. Thirty-three states and nine cities have used the examinations prepared by the Merit System Service. In addition, schools of public health nursing, schools of sanitary engineering, visiting nurse associations, the U. S. Public Health Service and state licensing or registration boards are using these examinations.

Descriptive of the activity of the staff on the 5th floor at 1790 Broadway, New York, is the report for the month of May, 1948. Twenty-seven examinations were prepared for 6 states and delivery of examinations was made to one school of public health nursing. Three states ordered 19 examinations for future delivery. There are orders on hand for 61 examinations for 9 states and 23 examinations for the U. S. Public Health Service.

To show the widespread use of the examinations, lists were prepared as of May 31, 1948. Seven states have ordered written examinations for administrative health officers, and two cities have used examinations for similar classes. The U. S. Public Health Service is using written objective-type examinations prepared in coöperation with the Merit System Service for the selection and promotion of commissioned officers. One state is planning to use the examinations for the selection of medical officers for promotion within the state health department. The states which have used examinations for administrative health officers are as follows:

Administrative Health Officers
California
Colorado
Illinois
New York
Oklahoma
South Dakota

Examinations for the selection of laboratory personnel have been delivered to 16 states as follows:

Laboratory

Alabama	Nevada
Georgia	North Carolina
Illinois	Oklahoma
Kentucky	Rhode Island
Louisiana	South Dakota
Maryland	Utah
Mississippi	Vermont
Missouri	West Virginia

Twenty-one states have ordered examinations in environmental sanitation. One state is using an examination for licensing sanitary inspectors and a school of sanitary engineering used an examination for students of sanitary engineering. The Public Health Service is now using examinations for the selection and promotion of sanitary engineers. The states using examinations in environmental sanitation are listed.

Environmental Sanitation

California	Massachusetts
Colorado	Mississippi
Florida	Missouri
Georgia	Nebraska
Idaho	Nevada
Illinois	North Carolina
Iowa	Oklahoma
Kentucky	South Carolina
Louisiana	South Dakota
Maryland	Utah

The most extended use of written examinations prepared by the Merit System Service is in the field of public health nursing. Examinations have been delivered to 30 states as well as to schools of public health nursing, visiting nurse associations and the U. S. Public Health Service. The states are listed below.

The use of written objective examinations as one of the devices for selecting public health personnel is on the increase and indicates a trend in personnel practices. A health agency is considering using written objective examinations for determining knowledge in the general field of public health as a guide to in-service training. The Merit System Service is developing short illustrative examinations for use at the annual meeting. Inquiries regarding the examination services are invited.

Nursing

Alabama	Kentucky	Oklahoma
Arizona	Louisiana	Pennsylvania
California	Maryland	Rhode Island
Delaware	Massachusetts	South Carolina
Florida	Mississippi	South Dakota
Georgia	Nebraska	Utah
Idaho	Nevada	Vermont
Illinois	New Mexico	Virginia
Iowa	New York	West Virginia
Kansas	Ohio	Wyoming

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Joseph M. Bistowish, M.D., County Health Dept., P. O. Box 491, Gainesville, Fla., Asst. Health Officer, Alachua County

L. R. B. Centanni, M.D., Box 128, Thibodaux, La., Director, Lafourche Parish Health Unit

Sidney Cobb, M.D., Nashoba Health Unit, Central Ave., Ayer, Mass., Director

Harold O. Hunt, M.D., Town Hall, Falmouth, Mass., Inspector, Falmouth Board of Health

George Kraus, M.D., 51 Blaine St., Fairfield, Conn., Health Officer, Town of Fairfield

Juan Moreder, M.D., M.P.H., Escuela de Salubridad, 9 de Julio, 3467, Santa Fe, Argentina, S. A. Professor of Public Health Administration, School of Public Health, National University of the Litoral

Gordon M. Parrott, M.D., 1023 N. Tacoma Ave., Tacoma, Wash., Asst. Director, Tacoma & Pierce County Health Depts.

W. M. Singleton, M.D., Court House, Room 303, Portsmouth, Ohio, County Health Commissioner, Scioto County Board of Health

Joseph H. Stickler, M.D., M.P.H., Route 5, Box 993, Hanford, Calif., Kings County Health Officer

Albert E. Thoms, M.D., C.M.D.P.H., Leeds & Grenville Health Unit, Brockville, Ontario, Canada, Director

Myron G. Tull, M.D., M.P.H., 426 E. Lake Ave., Baltimore 12, Md., Administrative Health Officer, City Health Dept.

Laboratory Section

Virginia D. Allen, M.S., State Laboratory of Hygiene, M. I. Bldg., Madison, Wis., Bacteriologist

Louise Barney, 2227 Ellis Ave., Boise, Idaho, Senior Bacteriologist, State Dept. of Public Health

Seymour A. Greenspon, A.M., 201 College Ave., Columbia, Mo., Instructor in Medical Bacteriology and Preventive Medicine, Univ. of Missouri

Russell R. Harrison, 209 Center Drive, N.H.A. 1, Honolulu 50, T.H., Bacteriologist and Asst. Epidemiologist, District Medical Office, Preventive Medicine Section, Pearl Harbor, T.H.

Floyd A. Martin, M.D., 4 McAlester Hall, Columbia, Mo., Professor of Bacteriology and Preventive Medicine, School of Medicine, Univ. of Missouri

A. Kealy Mayes, City Health Dept. Laboratory, 2013 Commerce, Dallas, Tex., Laboratory Director

Francis Pattison, Caro State Hospital for Epileptics, Caro, Mich., Bacteriologist

Helen Schmidt, 4218 Geneva St., Pittsburgh 1, Pa., Student, Univ. of Pittsburgh

Milton Segalove, Ph.D., 10717 Venice Blvd., Los Angeles 34, Calif., Bacteriologist, Bio-Science Laboratories, Inc.

Charles Symon, M.D., Benesova 10, Brno, Czechoslovakia, Asst. Dept. of Hygiene and Bacteriology, Medicine Faculty, Brno

Peter Vogel, M.D., 51 East 90th St., New York 28, N. Y., In charge, Rh. Testing Laboratory, Bureau of Laboratories

Engineering Section

Charles G. Caldwell, M.S., 554 E. Garcia, Santa Fe, N. M., Director, Division of Sanitary Engineering and Sanitation, State Dept. of Public Health

Ray L. Derby, Terminal Annex, P. O. Box 3669, Los Angeles, Calif., Principal Sanitary Engineer, Los Angeles Dept. of Water and Power

Robert E. Mytinger, 136 South Canon Drive, 106, Beverly Hills, Calif., Student, School of Public Health, Univ. of California

Donald L. Truax, 101 California St., San Francisco 19, Calif., Consulting Sanitarian, California Packing Corp.

Thomas N. Uffelman, 1012 18th Avenue South, Nashville 4, Tenn., Trainee, Davidson County Health Dept.

Industrial Hygiene Section

M. N. Rao, Dr. P.H., 110 Chittaranjan Ave., Calcutta, India, Asst. Professor in Physiological and Industrial Hygiene, All India Institute of Hygiene and Public Health

Food and Nutrition Section

Margaret P. Zealand, 19 W. State St., Trenton 8, N. J., Nutritionist, State Dept. of Health

Maternal and Child Health Section

Helen E. Hestad, 2732 Harriet Ave., South, Minneapolis, Minn., Consultant in Maternal and Child Health, Bureau of Public Health Nursing, City Health Dept.

Wallace S. Trowbridge, 1116 Denver, Boise, Idaho, Special Investigator, State Dept. of Public Health

Shih-Chin Wang, M.D., M.P.H., National Institute of Health, Ministry of Health, Nanking, China, Technical Expert, Maternal and Child Health

Public Health Education Section

Ernest L. Bates, 343 Atlas Ave., Grand Rapids 6, Mich., State Representative, National Foundation for Infantile Paralysis, Inc.

William T. Beatty, II., 74 John St., Kingston, N. Y., Health Educator and Asst., Ulster County Tuberculosis and Health Assn.

Marion T. Bryant, M.P.H., 2761 Fifth Ave., San Diego 3, Calif., Public Health Educator, San Diego City and County Health Depts.

Charles E. Burbridge, 654 Girard St., N.W., Apt. 201, Washington 1, D. C., Supt., Freedmen's Hospital

Mrs. Eleanor Fletcher, 993 Cragmont Ave., Berkeley 8, Calif., Trainee at Univ. of California and San Diego Health Dept.

Winifred H. Hillard, R.N., 405 Walker St., Cliffside Park, N. J., Asst. School Health Educator, District of Columbia Tuberculosis Assn.

Valda V. Johnson, 915 S. 5th, Ponca City, Okla., Exec. Secy., Kay County Tuberculosis Assn.

W. Wray Jonz, M.P.H., 805 Sixth, Eureka, Calif., Health Educator, Humboldt County Health Dept.

Charles L. Massey, Jr., 613 W. Dickson St., Fayetteville, Ark., State Representative, National Foundation for Infantile Paralysis, Inc.

Miriam Newmark, 1 Madison Ave., New York 10, N. Y., Secy., Metropolitan Life Insurance Company

Wilbert P. Pape, 633 North Fourth St., Milwaukee 3, Wis., Director of Health and Physical Education, Young Mens Christian Assn.

Gladys M. Peacock, 222 E. 49th St., New York, N. Y., Information Secy., Bronx Committee, N. Y. Tuberculosis and Health Assn.

Maxine T. Shafer, M.S.P.H., City Health Dept., Asheville, N. C., Public Health Educator

W. Franklin Wood, M.D., McLean Hospital, Waverley 79, Mass., Director

Public Health Nursing Section

Gertrude Cramer, R.N., 321 E. 6th St., A.R.C., Cincinnati, Ohio, Director Nursing Services, Cincinnati and Hamilton County Chapter, American National Red Cross

Ruby Daniels, Box 1296, Sterling, Colo., Supervising Nurse, Northeast Colorado Health Dept.

Olive J. Faulkner, M.S., 3924 Alma Ave., Richmond, Va., Advisory Nurse, State Health Dept.

Pearl H. Hamilton, R.N., Michigan Dept. of Health, Lansing, Mich., Regional Nursing Consultant

Mary Kutansky, 1001 E. 3rd St., Chattanooga, Tenn., Instructor, Erlanger Hospital

Dorothy Morris, B.S. in N.Ed., St. Elizabeths Hospital, Washington 20, D. C., Asst. Chief Nurse

Charlotte C. Skooglund, M.A., 56 Lockwood St., Providence 2, R. I., Assoc. Director, School of Nursing, Rhode Island Hospital

Roma M. Summers, Orofino, Idaho, Public Health Nurse, State Dept. of Public Health

Irene P. Woods, 618 8th Ave., Lewiston, Idaho, Supervising Public Health Nurse, North Central District Health Unit

Epidemiology Section

Dudley W. Hargrave, M.D., M.P.H., 510 Terminal Bldg., Rochester 4, N. Y., District State Health Officer

Luis E. Najera-Angulo, M.D., Buenos Aires 769, Tucuman, Argentine, S. A., Professor of Epidemiology, Universidad Nacional de Tucuman

Harold J. Sacks, M.D., 3825 S. Burnside, Los Angeles 56, Calif., Clinic Director, City Health Dept.

Vaclav Tomasek, M.D., Veveri 9, Brno, Czechoslovakia, Professor of Hygiene, Masaryks Univ., Medical Faculty

School Health Section

Roland Y. Glidden, M.D., 5334 Chesley Ave., Los Angeles 43, Calif., Supervisor, School Health, City Board of Education

Basil R. Tolle, P. O. Box 2275, Stanford, Calif., Student, Stanford Univ.

Dental Health Section

Frank P. Bertram, D.D.S., M.P.H., 3400 North Eastern Ave., Oklahoma City, Okla., Director, Division of Preventive Dentistry, State Health Dept.

Harry I. Kurisaki, D.D.S., 1192 Smith St., Honolulu, T.H., Territorial Dental Board Member

Norman C. LeClerq., D.D.S., University Club Bldg., St. Louis, Mo., Dentist

Roy D. Smiley, D.D.S., 1098 W. Michigan St., Indianapolis, Ind., Director, Division of Dental Health, State Board of Health

William E. Walton, D.D.S., R.F.D., Auburn, Pa., District Dental Officer, Bureau of Dental Health, State Dept. of Health

Unaffiliated

Philip E. Adams, D.M.D., 106 Marlboro St., Boston 16, Mass., Professor of Orthodontics, Tufts College Dental School

Albert L. Albright, 1021 Tyler, Topeka, Kan., Director, Division of Personnel and Finance, State Board of Health

Kenneth J. Carhart, 87 Acres Drive, Hamilton Square, N. J., Asst. Chief, Division of Personnel, Administration Records and Accounts, State Dept. of Health

John J. Carroll, 54 40th St., Irvington 11, N. J., Secy., Health Dept.

Eva H. Erickson, 515 Main, Olean, N. Y., Administrator, Olean General Hospital

Howard E. Ericson, 3114 West Raymond St., Seattle 6, Wash., Operating Manager, Washington State Dept. of Health

Henry Gavens, M.C.S., Municipal Center, D. C. Health Dept., Washington, D. C., Budget and Administrative Officer

Alice Harris, 2747 Haste St., Berkeley, Calif., Asst. Secy., American Public Health Assn., Western Branch

Robert T. Malone, Centennial Bldg., Room 6, Springfield, Ill., Fiscal Officer, State Dept. of Public Health

Sue Z. McCracken, R.N., 328 Oakmoor Rd., Bay Village, Ohio, General Secretary, District 4, Ohio State Nurses Assn.

Sol L. Nemzoff, c/o Dr. E. Ruegg, Susenbergstrasse 90, Zurich, Switzerland, Medical Student, Univ. of Zurich

Irvin C. Petersen, R.F.D. 3, Boise, Idaho, Lay Investigator, Local Health Service, State Dept. of Public Health

Mae Reynolds, State Board of Health, Raleigh, N. C., Budget-Purchasing Officer, State Board of Health

Mrs. Lucille M. Smith, 9403 Flower Ave., Silver Spring, Md., Chief, Medical Needs Section, Bureau of Public Assistance, Federal Security Administration

Kenneth A. Tyler, M.D., 905 South Main St., Gooding, Idaho, Medical Director, Idaho State Tuberculosis Hospital

Beulah T. Wild, M.A., 1014½ Capitol, Houston, Tex., Exec. Secy., Health Council of the Community Council

Henry M. Wiswall, M.D., 308 Ford Bldg., Vancouver, Wash., General Medicine and Surgery

Charles V. Wynne, M.B.A., Waterbury Hospital, Waterbury 61, Conn., Superintendent

Hotel Reservations at Boston

Members are asking which is the "Headquarters" hotel for the Boston Annual Meeting. The answer is that no one hotel has been designated headquarters for delegates because Boston's hotels, though numerous, are not large.

A Housing Bureau is being operated for the Association by the Boston Convention Bureau. We are asking members to select their own hotel from among those listed on page 1178. The application should be carefully filled in and mailed to:

The Housing Bureau
Boston Chamber of Commerce
80 Federal Street
Boston, Mass.

Convention activities will center largely in Mechanics Building. We rearrange the list of hotels below to show you their location with relation to Mechanics Building. No. 1 is nearest, 2 next in order of distance, and so on.

1—Hotel Minerva
2—Copley Square Hotel
3—Copley Plaza Hotel
4—Hotel Lenox
5—Hotel Gardner
5—Hotel Hemenway
5—Hotel Vendome
6—Hotel Statler
7—Hotel Bradford
8—Hotel Touraine
9—Hotel Puritan
10—Hotel Somerset
11—Hotel Myles Standish
12—Hotel Sheraton
13—Hotel Kenmore
14—Hotel Braemore
15—Hotel Bostonian
16—Hotel Bellevue
16—Hotel Manger
16—The Parker House
17—Hotel Continental

Single rooms are few and are hard to obtain. Rooms for double occupancy are strongly recommended. There is no question about the ability of Boston's hotels to accommodate the delegates to the Annual Meeting, but the Housing Bureau and the Local Committee ask the coöperation of the membership in seeking double rather than single room accommodations.

A.P.H.A. membership application blank on page XXV

THE 76TH ANNUAL MEETING
Boston, Mass., November 8–12, 1948

Hotel Reservation Form

The hotels listed below have rooms available for Association delegates at the rates indicated. Please note that NO RESERVATIONS WILL BE ACCEPTED DIRECTLY BY HOTELS. Make your reservation through:

The Convention Bureau, Boston Chamber of Commerce, 80 Federal Street, Boston 10, Mass.

Hotels	*Singles*	*Doubles*	*Twin Beds*	*Suites*
Bellevue	$4.00–$6.00	$6.00–$8.00	$7.25–$10.00	$12.00–$15.00
Bostonian	3.00– 4.50	5.00– 6.50	5.00– 7.00	8.00– 10.00
Bradford	4.00– 6.00	6.00– 7.00	6.50– 8.00	12.00– 14.00
Braemore	4.40– 6.60	6.40– 9.90	6.60– 9.90	9.90– 25.00
Continental	3.50– 4.00	6.60	7.00	8.00– 25.00
Copley Plaza	4.50– 6.60	7.75– 8.80	8.80– 10.00	15.00– 25.00
Copley Square	4.00– 5.00	6.00	7.00	10.00– 14.00
Gardner	2.50– 5.00	4.00– 6.00	4.00– 6.00	7.50
Hemenway	3.00– 3.85	4.40– 5.50	4.40– 5.50	None
Kenmore	4.00– 6.00	6.50– 8.50	6.50– 8.50	10.00– 12.50
Lenox	3.75– 5.00	5.50– 6.50	7.50	10.00– 16.00
Manger	3.85– 5.50	5.00– 7.50	5.50– 7.50	None
Minerva	3.00– 5.00	4.00– 6.00	5.00– 7.00	5.00– 8.00
Myles Standish	3.85– 6.50	5.50– 7.50	6.50– 7.50	6.50– 15.00
Parker House	4.00– 6.50	6.25– 8.50	7.50– 10.00	14.00– 16.00
Puritan	4.40– 6.60	6.60– 8.80	9.90	13.20– 17.60
Sheraton	4.00– 4.50	7.00– 8.00	7.00– 8.00	7.00– 16.00
Somerset	5.00– 9.00	7.00–11.00	7.00– 11.00	10.00– 20.00
Statler	4.00– 9.50	6.50–12.00	8.50– 14.00	17.50– 27.00
Touraine	4.00– 6.00	6.00– 9.00	7.50– 9.00	14.00– 16.00
Vendome	3.75– 7.00	5.50– 8.75	6.50– 8.75	10.00– 15.00

MAKE ROOM RESERVATIONS EARLY

APPLICATION FOR HOTEL ACCOMMODATIONS
AMERICAN PUBLIC HEALTH ASSOCIATION

76th Annual Meeting and Meetings of Related Organizations, Boston, November 8–12, 1948

(Note that the Meeting opens Monday, November 8, at 9.30 A.M.)

Please make hotel reservation as indicated below:
Give three choices of hotels.

Hotel ..... 1st Choice; Hotel ..... 2nd Choice; Hotel ..... 3rd Choice

.... Room with Double Bed at $..... per day for .... persons
.... Room with Twin Beds at $..... per day for .... persons
.... Room for three people at $..... per day for .... persons
.... Single room at $..... per day
.... Suite at $..... per day for .... persons

ARRIVING. NOVEMBER .... Hour ..... LEAVING: NOVEMBER .... Hour .....

Please print (or type) names and addresses of all occupants including persons making reservation.

NAME STREET ADDRESS CITY STATE

.....
.....
.....

Name .....
Street Address .....
City ..... State .....

MAIL TO: The Convention Bureau, Boston Chamber of Commerce, 80 Federal St., Boston, Mass.

RESERVATIONS WILL BE HELD UNTIL 6:00 P.M. ONLY, UNLESS THE HOTEL IS NOTIFIED OF LATE ARRIVALS

EMPLOYMENT SERVICE

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

Address all correspondence to the Employment Service, A.P.H.A., 1790 Broadway, New York 19, N. Y., unless otherwise specified.

(Supplemental to list in July Journal)

Positions Available

General Sanitarian whose principal duties will be restaurant sanitation; should have Bachelor's Degree with major in Chemistry or Bacteriology, and a minimum of one year's experience in full-time local Health Department. Post-graduate work of at least one semester in a school of public health desirable. Densely populated county; large, well organized department staff; salary open. Write Director, Will County Health Department, 21 East Van Buren Street, Joliet, Ill. Include snapshot and short history in the first letter.

Town of 26,000, convenient to medical and cultural centers needs full-time **Health Officer,** salary $6,000, plus mileage. Write Board of Health, Milford, Conn., for application.

Bacteriologist with B.S. or B.A. degree, and 1 year training in public health bacteriology and serology, and 1 year's experience in a public health laboratory to work in State Public Health Laboratory. Salary $3,120 to $3,984. Apply State Department of Health, Box 1877, Richmond, Va.

Health Educator for generalized full-time public health program; atomic energy project Pacific Northwest; salary depending upon experience and training; 40 hour week; complete community and plant program; M.P.H. required. Write or wire: Administrator, Kadlec Hospital, Richmond, Wash.

Senior Bacteriologist, County Health Department Laboratory. Salary $3,600–$4,560. Write Kern County Health Department, P.O. Box 120, Bakersfield, Calif.

Clinical Laboratory Technician in Kern County Department of Public Health, California. Salary $2,640 to $3,120 annually. Write P.O. Box 120, Bakersfield, Calif.

Nurses are needed for public health work in Texas. The program is conducted under a Merit System. The compensation range for Sr. Public Health Nurses is from $189.75 to $212.75 per month. The compensation range for Jr. Public Health Nurses is from $166.75 to $201.25 per month. The compensation for War Emergency Nurses is from $143.75 to $178.25 per month. In addition to the above salary there is usually provided approximately $600.00 per year car allowance. Write State Health Department, Austin, Tex.

Industrial Hygiene Physician. $6,720 to start. Advances to $7,440. Minimum of three years' experience in industrial medicine. Graduation from medical school, one year internship and at time of appointment or within three years thereafter one year of graduate training. Permanent. Civil Service status. Retirement. Apply to: Harold M. Erickson, M.D., State Health Officer, Oregon State Board of Health, 1022 S. W. 11th Ave., Portland 5, Ore.

Public Health Nurses for pleasant rural county in Southwestern Michigan within 125 miles of Chicago, 150 of Detroit, 17 of Kalamazoo. A recreation area bordering on Lake Michigan with many lakes. Excellent opportunity to obtain generalized Public Health Rural Nursing experience, under well qualified supervision. Salary dependent upon training and experience, generous travel allowance, 40 hour week, liberal vacation and sick leave allowance with pay. Write, Director, Van Buren County Health Department, Paw Paw, Mich.

Several Qualified Public Health Officers in Texas. Must meet Merit System requirements. Formal specialized training or experience needed. Salary range $5,500 to $7,200 per year, plus $600 per year travel allowance. Write, Dr. Geo. W. Cox, State Health Officer, Austin, Tex.

Full-time Health Commissioner to direct and develop public health program in Lorain, Ohio, an industrial city of 50,000 and to head staff of assistants. Write:

William Lefever, Board of Health, Lorain, Ohio.

Public Health Nurses to render generalized nursing service which includes school nursing. Salary $2,400 to $3,000 with bonus of 10 per cent for 1948. Write: Town Nursing Service, Greenwich, Conn.

Sanitarian or Public Health Engineer as Director of milk, food, meat, and sanitation in sixty person Health Department of midwest city of 160,000. Sanitation staff of thirteen at present. Degree in Sanitary Engineering or related science and experience required. Usual Civil Service status and benefits, car and travel expenses including important meetings provided. Salary $4,400 to $4,850 at completion of two years' service. Write **Box A-21**, Employment Service, A.P.H.A.

Assistant Bacteriologist, male, U. S. citizen, for City Public Health Laboratory for bacteriological and serological work and related duties. College degree with major in the natural sciences including courses in bacteriology and one year's pertinent experience or equivalent combination required. Applicants with less than one year's experience may be taken on as trainees. Write Personnel Officer, 4th floor, City Hall, 241 W. South Street, Kalamazoo 13, Mich.

Wanted — M.D., Master in Public Health, experience in local health department. Starting $7,920, top of range $9,000, new auto furnished, large staff, adequate budget, Chicago area. Apply Will County Health Department, 21 E. Van Buren, Joliet, Ill.

Public Health Educator (Lecturer in Social Hygiene). Monthly salary $270–$325. Write Personnel Officer, State Board of Health, Madison 2, Wis.

Public Health Nurse wanted with Public Health Certificate. Beginning salary $3,428 to maximum of $4,018. Car furnished. Permanent tenure, vacation and sick leave, five day week. For further information apply to the Civil Service Board, City Hall, Dearborn, Mich.

Sanitarians wanted for Food and Sanitation Division of a city—population approximately 85,000. College graduates preferred who have working knowledge of modern methods, techniques, and practices of public health sanitation. Permanent tenure, liberal vacation, sick leave, and retirement privileges. Salary range $3,854–$4,248. Apply to Civil Service Board, City Hall, Dearborn, Mich.

Two Staff Nurses for generalized Public Health Nursing Program, adjacent to Washington, D. C. Three weeks paid vacation, sick leave, 40 hour week, merit salary increases, opportunity to attend universities part-time in Washington. Must own car. Apply Personnel Director, Arlington Court House, Arlington, Va.

Public Health Nurse, salary range $2,700 to $3,000. Must have certificate or degree in Public Health Nursing. Generalized service. Write to Tuscarawas County General Health District. Box 249, New Philadelphia, Ohio.

Sanitary Engineer with knowledge of mosquito control for large industrial concern in tropical location. Must be willing to go abroad on single status for about six months. Excellent opportunity for man under 35 to do interesting work on career basis. Write **Box A-22**, Employment Service, A.P.H.A.

Deputy Health Officer at the Rochester Health Bureau, Rochester, N. Y. Salary $7,000. M.D. degree and graduate work in public health required. Duties varied. Write, Dr. Albert D. Kaiser at above mentioned address giving training and experience and special interests in public health.

Associate Bacteriologist, Public Health. Master's degree. Two years' suitable postgraduate experience. Salary range $306 to $350 per month. Permanent position under effective civil service.

Senior Assistant Bacteriologist. Public Health. Salary range $242 to $270 per month. B.S. degree with major in biology and at least 18 months' public health laboratory experience required. Some graduate work or teaching experience highly desirable. Write: Director of Laboratories, Laboratory Section, St. Louis Health Division, Room 32, Municipal Courts Building, St. Louis, Mo.

Public Health Nurse: For generalized program (including school service). Staff of 40 nurses. Completion of accredited public health nursing course required. Beginning salary $2,940—possibly higher. County car or 6¢ per mile for use of personal car. Personnel policies good, including five day week and annual salary increments. Write: Director of Public Health Nursing, Kern County Department of Public Health, P. O. Box 120, Bakersfield, Calif.

Staff School Nurse for small, well organized school health department on Pacific Coast. Salary approximately $2,850, 35 hour week, 9 calendar months including 3 weeks vacation. Three summer months free. Annual increment for ten years, tenure after three probationary years. Must be under thirty with B.A.

and P.H.N. degrees, at least one year's experience in generalized nursing program and own car. Send photograph, age, degrees, training and experience since receiving P.H.N., marital status, number of children. Position open September, 1948. Write: **Box A-23**, Employment Service, A.P.H.A.

Public Health Nurse, white. Starting salary $2,200. Apply: Health Officer, Health Center, Alexandria, Va.

Supervisors of Public Health Nurses. Baltimore County Health Department. Population 230,000; suburban, industrialized and rural areas; county seat 8 miles from Baltimore. Generalized service; director, 4 supervisors, 36 field nurses. Degree and experience required. Salary $3,100 to $3,600; for special preparation in child hygiene, venereal disease, mental hygiene or orthopedics, $3,400 to $3,900. Also **Public Health Nurses**, beginning salary $2,300 (for trainee) to $2,700, depending on experience and education; increases to $3,300. Retirement plan; 1 month's vacation; 5 day, 35½ hour week; sick leave. For use of personal car, allowance of 7 cents per mile. Write: Dr. William H. F. Warthen, Health Officer, Baltimore County Health Department, Towson 4, Md.

Sanitarian, for town of 30,000 in the Northeastern United States. College graduate with major in Biological sciences and experience in sewage disposal and restaurant sanitation. Salary $3,000 to $3,500, plus car allowance. Car necessary. Write: Health Officer, Fairfield, Conn.

School Nurse for High School, Northeastern United States. R.N. and some public health experience required. College graduate preferred. Salary $3,000 annually and increments. Write: Health Officer, Fairfield, Conn.

Public Health Nurse Supervisor—with certificate or one year of graduate study in public health. Salary range $3,120 to $3,600. Vacation, sick leave, retirement plan, 5 day week, permanent tenure. Car furnished. Write: Charles A. Neafie, M.D., Director, Dept. of Public Health, Pontiac 15, Mich.

Director for School Health Service, City Public Schools, M.D. required. M.P.H. desirable but not essential for applicants with public health experience. Age preferred 30–40. Beginning salary $6,000. Staff of 17. Write: W. A. Bass, Superintendent, City Public Schools, Nashville 5, Tenn.

Health Educator for a college major in Health Education. Master's degree is required. Should be able to teach Administration and Organization and Materials and Methods of Health Education, and supervise student practice field work. Starting salary $3,800 for 9 months, extra pay for Summer School. Man preferred. Write: Dean, Springfield College, Springfield, Mass.

Sanitation Engineer, foreign location; experienced man to handle general work in tropics for well established plantation. Will supervise sanitation problems, mosquito control. Splendid 2 year contract for qualified man. In reply give age, education, experience, and salary expected. Write: **Box A-24**, Employment Service, A.P.H.A.

Public Health Nurses needed in Nevada. Permanent positions in rural counties and local county health unit. **Junior Public Health Nurses:** (salary range $2,160–$2,640 annually); minimum of 6 months' postgraduate public health nursing training. **Senior Public Health Nurses:** (salary range $2,340–$2,940 annually). One academic year of postgraduate training in public health nursing plus satisfactory experience in official agency. Mileage allowance 7½¢, if nurse owns car. Write: Nevada State Department of Health, Division of Public Health Nursing, Reno, Nev.

Associate Director who can in time succeed Director of Midwest City Department with better than average budget, program and staff of 70, Civil Service benefits. Preference to training and/or experience in M.C.H. or Tuberculosis. Salary to $7,000 as Associate and $10,000 as Director. Write: George Hays, M.D., Director, Dept. of Public Health, P. O. Box 28, Flint, Mich.

Sanitary Engineer in a well organized County Health Department in the choice section of Illinois. Twenty staff members including 2 sanitarians. Salary to depend on training and experience, liberal travel allowance. Population of County 72,000. Apply: McLean County Health Dept., 1009 North Park St., Bloomington, Ill.

Qualified Public Health Nurses for attractive rural area on coast of Northern California. Generalized Public Health Program. Population 60,000, State Retirement Plan. Car furnished. Salary range $3,000–$3,600. Apply: Director, Humboldt County, Department of Public Health, 805 Sixth St., Eureka, Calif.

The Denver City-County Health Department has several vacancies for **Public Health Nurses** with training and experience and interested in field teaching. Beginning salary $245.00 per month plus mileage. Generalized program except for public school services. Recent Visiting Nurse Association merger. University field program. Write: Mrs. Mary Emberton, Director, Visiting Nurse Service, Denver Health Department, Denver General Hospital, Denver, Colo.

Opportunities in Colorado

The Weld County Health Department in Greeley, Colorado, announces the following openings: Public Health Nurse III, salary approximately $3,000, Nutritionist, $2,760, Health Education Director, $4,200, Psychiatric Social Case Work Supervisor, $3,600, Public Health Sanitarian or Engineer, $4,000 to $5,000 depending on background and experience. Apply Director, Weld County Health Department, Court House, Greeley, Colo.

Opportunities for Physicians in Wisconsin

The Wisconsin State Board of Health announces a number of vacancies for qualified public health physicians and medical specialists. Attempts to revise upward the salary scale for these positions have recently met with success. The following are the most important medical vacancies and the new monthly salary scales:

Medical Specialist I (Obstetrics and Gynecology) $545–$645 per month.
Medical Specialist I (Pediatrics) $545–$645 per month
Medical Specialist I (Psychiatry) $545–$645 per month.
Public Health Physician I (District Health Officer) 4 vacancies, $545–$645 per month.
Public Health Physician II (Ass't Chief M.C.H.) $625–$735 per month.
Public Health Physician II (Tuberculosis) $625–$735 per month.
Public Health Physician II (Venereal Disease and Epidemiology) $625–$735 per month.

Write: Personnel Officer, State Board of Health, Madison 2, Wis.

Opportunities in Minnesota

	Salary Range
Public Health Engineering Aide	$2,568–$3,048
Public Health Engineer I	3,480– 4,080
Public Health Engineer II	4,332– 5,052
Public Health Engineer III	5,232– 5,952
Public Health Engineer IV	6,024– 6,864

All applicants must have graduated from a university of recognized standing with specialization in engineering and various requirements of graduate training and experience. Write: Minnesota State Civil Service Dept., 122 State Office Bldg., St. Paul 1, Minn.

POSITIONS WANTED

Health Agency Executive — considerable experience in community organization, voluntary health agency administration and health interpretation desires similar position in East or Middle West. Interested in health or educational agency or industrial organization concerned with planning and promotion of health services and education program. Write **Box C-1,** Employment Service, A.P.H.A.

Health Educator, male, Negro, M.A., M.P.H., 10 years of health education and teaching in school systems and colleges, 20 months' community health education in a metropolitan area. Interested in community or school health education. Write **Box HE-4,** Employment Service, A.P.H.A.

Health Educator, Negro, Male, 39. M.S.P.H. (Columbia), 4 years' experience

in official health agency. Interested in community health education or health education in schools. Write **Box HE-5,** Employment Service, A.P.H.A.

Recent **Graduate Veterinarian** (KSC '47) with B.S. degree in bacteriology desires employment. Some experience as a sanitarian. Write **Box V-5,** Employment Service, A.P.H.A.

Physician, woman, considerable experience in practice of pediatrics and school health administration, consultant to professional and voluntary agencies, desires interesting position part or full time in greater New York area. Write **Box Ph-6,** Employment Service, A.P.H.A.

Physician, Woman, M.P.H. 1948; 3 years' interneship and residency experience; 1 year college health work. Interested in epidemiology, health education, school health, teaching. Write **Box Ph-7,** Employment Service, A.P.H.A.

Graduate Veterinarian, experienced in disease control work and private practice, desires position in industry and/or public health field. Write **Box V-4,** Employment Service, A.P.H.A.

Biological and Physical-Chemist, Ph.D. available soon, for Research or Teaching, extensive experience in pharmacology, pharmaceuticals, biologicals, bio-assays. Former university professor, former head, development department of large pharmaceutical manufacturer; 60 publications, many in medical research; books. Executive ability and experience. Age: 35; married; children. Seeks responsible position, educational institution or hospital laboratory. New York Metropolitan area preferred. Answer **Box L-2,** Employment Service, A.P.H.A.

Sanitary Engineer—6 years' experience in the field of public health engineering with Sanitary Corps, Federal and private agencies. M.S. degree in Sanitary Engineering. East preferred. Write **Box E-5,** Employment Service, A.P.H.A.

Health Educator, B.S., M.A., Ed.D.; 10 years' experience with public schools and colleges. Now doing teacher training in large state university and acting as consultant to school administrators and teachers. Seeks opportunity in public school health program or combination of health and physical education in either public schools or college teacher-training. Write **Box A-25,** Employment Service, A.P.H.A.

Public Health Administrator, M.D., Dr.P.H. Twelve years' experience in teaching of public health and preventive medicine in various medical schools. Experience as director of school health in a public school system. Eight years' experience in official and voluntary agencies and armed forces. Middlewest preferred. Currently employed, but seeking challenging position. Write **Box C-2,** Employment Service, A.P.H.A.

Dentist—Thirty years' experience in clinical and 5 years' experience in public health hospital administrative work. Interested in dental opening (South and Southwest preferred) with or without clinical responsibilities. Write: **Box D-2,** Employment Service, A.P.H.A.

Advertisement

Opportunities Available

WANTED—(a) Public health administrator; residential town of 65,000; competent organizer required; Middle West; minimum $7,500. (b) Public health dentist; administrative position; voluntary health agency supported by Community Chest with children's dental clinics located in different parts of city and suburbs; Eastern metropolis. (c) Public health physician for position with preventive medicine department of large industrial company; East. (d) Two student health physicians and, also, dentist, to join staff of student health department, university having enrollment of 12,000 students; West. (e) Young woman physician; student health department, young women's college; New England. (f) Director of school health service; metropolitan area; East; $8,000. **PH8-1** Medical Bureau (Burneice Larson, Director), Palmolive Building, Chicago 11.

WANTED—(a) Statistician to direct division of vital statistics, state department of health; $5,100. (b) Bacteriologist, M.S. degree with two years' experience in public health laboratory work required; municipal department of health; Middle West. (c) Health educator; newly created position, municipal health department, middle western town of 150,000. (d) Sanitary engineer; division of engineering and sanitation; county department of health serving population of 300,000. (e) Superintendent of sanitation; city health department; 150 employees; Southern city, 200,000. (f) Health educator to work with colleges and educators; preferably one who has taught health education in a teachers college; willing to travel; East. (g) Sanitary engineer to direct department serving population of 7,000,000; experience in water and malarial control required; M.A. degree and public health background essential; South America. (h) Sanitary engineer qualified to handle malaria control work; training in bacteriology required; operation of large industrial company in Africa. (i) Instructors; department of public health and bac-

teriology; opportunities for research; state university; West. **PH8-2** Medical Bureau (Burneice Larson), Palmolive Building, Chicago 11.

WANTED—(a) Orthopedic nursing consultant; duties consist of developing and organizing adequate consultation service in orthopedic nursing; degree and graduate training in public health nursing required; university medical center; Mid-south. (b) Supervisor of public health nursing; county health department; generalized program; headquarters in city of 45,000; East. (c) Coördinator of public health nursing; duties consist of directing public health program for student nurses; university appointment; East. (d) Student health nurse; young women's college; duties consist of taking charge of boarding school group of approximately 60 students and 15 faculty members; no responsibilities in connection with day school of 300 students except in matters of consultation; program directed by school doctor; well equipped infirmary; university medical center; opportunity for continuing studies. (e) Public health supervisor; generalized program; Pacific Northwest. (f) Public health nurses of supervisory caliber for executive positions in Latin America; knowledge of French, Spanish, or Portuguese desirable; interesting appointment. **PH8-3** Medical Bureau (Burneice Larson, Director), Palmolive Building, Chicago 11.

Advertisement

Opportunities Wanted

Physician well qualified as health educator; B.S., M.D., and Master of Health degrees; several years, director of university health service where he has carried a rather heavy teaching load; recommended as an exceptionally fine teacher, clear thinker about problems of education and student welfare, able to stimulate students to high degree of activity; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Dentist experienced in public health work; several years, private practice limited to children's dentistry; past six years public health dentistry; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Sanitarian; Degree in Civil Engineering; five years, sanitary engineer, county health department; six years, director, rural sanitation, state department of health; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Statistician; M.S. in Mathematical statistics; M.S.P.H. in public health statistics; year's research experience; five years, statistician with public health organization; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Health educator; B.S., M.S., and Ph.D. degrees; several years, instructor in biology, bacteriology and health; state university; three years, public health educator, city and county health department; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Public health nurse executive; M.S. degree, health education and public health; six years, executive secretary, county tuberculosis association; seven years, director, metropolitan public health nursing association; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

Public health physician; degrees, Eastern schools M.P.H. Johns Hopkins; twelve years' administrative experience in public health medicine; for further information, please write Burneice Larson, Director, Medical Bureau, Palmolive Building, Chicago 11.

NEWS FROM THE FIELD

NATIONAL LOCAL HEALTH UNITS PROGRAM TAKES ANOTHER STEP

On June 30, in New York, a newly appointed 16 member Interim Steering Committee of the National Advisory Committee on Local Health Units met for an all day conference to plan the program of the body for the coming months. The Chairman of the meeting was Philip R. Mather, President of the National Health Council, which is furnishing the secretariat and operating expenses for the National Advisory Committee.

As indicated in earlier issues of the Journal,[1] this National Advisory Committee grew out of the Princeton Conference when for the first time a large body of citizen and voluntary health agencies picked up the ball that had up to then been carried by the A. P. H. A., with the support of the American Medical Association and the Association of State and Territorial Health Officers.

Among the facts brought out at the June 30 meeting were that the National Advisory Committee now includes representatives of 45 national agencies, 25 of them citizen agencies such as Parent Teacher Associations, Lions, and National Grange, and 20 of them voluntary or professional health agencies; that 8 Bulletins on Local Health Units have been sent to a mailing list of some 450 agency executives, representatives, and house organs, state health officers, and a selected list of interested individuals, libraries, and publicity media. The 5-State Regional Conference[2] recently held in Indiana was also reported on, as were many of the current developments in the various states—the newly organized state-wide public health committees of Washington and Wisconsin for example, the organization of the new multi-county units in Colorado and Indiana, the very active campaign of the Lions International, which includes a half-day forum on local health units at the annual international meeting of this organization in New York, July 26-29; excellent material published in such journals as the *Junior League Magazine*, the *Lion*, the *Bulletin of the National Congress of Parents and Teachers*, and others. Activities of such varied organizations as County Medical Societies and their Woman's Auxiliaries, the American Association of University Women, the League of Women Voters in Virginia, Utah, Colorado, Iowa, and many other states, were reported.

The favorable action of the House Committee on Commerce and Labor on the PTA sponsored Public Health Services Bill of 1948 and the bright hopes for its passage in the special session of the 80th Congress, if called, or in the first session of the 81st, were also reported. These activities were reviewed by the agency representatives and by John W. Ferree, M.D., Associate Director of the National Health Council.

Haven Emerson, M.D., whose study, *Local Health Units for the Nation*, published in 1945, started this activity, pointed out the significance of the resolutions of the National Health Assembly[3] and of the National Conference on Family Life[4] in furthering the aim of covering the entire populace with full-time medically directed local health departments.

Reginald M. Atwater, M.D., Executive Secretary of the American Public Health Association told the committee that only through local community recruitment of public health workers could present personnel shortages be overcome.

The discussion of problems and the program for the future was under the

chairmanship of James Stone, Director of Program Development of the National Tuberculosis Association. Among the interim activities planned for the future were:

A meeting of the entire National Advisory Committee in the fall of 1948 to organize on a permanent basis and to develop a long term program.

A five State Rocky Mountain Regional Conference in Salt Lake City in October.

Continuation of the *Bulletin on Local Health Units* as an activity of the National Advisory Committee and in a more attractive format. Its primary purpose is to serve as a medium of information and of ideas for committee member agency house organs or journals.

Preparation of a pamphlet that would tell in brief and simple form what a local health department is, what benefits a community may expect from it; and how a community organizes itself to secure a unit or to make its existing one more effective.

The members of the Steering Committee are:

American Cancer Society, Edith M. Gates, Health Education Specialist

American Medical Association, A. J. Chesley, M.D., Minnesota State Health Commissioner

American National Red Cross, Ruth B. Freeman, R.N., Administrator of Nursing Services

American Public Health Association, Haven Emerson, M.D., Chairman, Subcommittee on Local Health Units

Association of State and Territorial Health Officers, Vlado A. Getting, M.D., Massachusetts State Health Commissioner

Congress of Industrial Organizations, Leo Perlis, National Director, CIO Community Services Committee

Lions International, Lee A. Rademaker, M.D., International Director

National Congress of Parents and Teachers, Mrs. L. W. Hughes, President

National Council of Negro Women, Mrs. Bertell Collins Wright, Health Education Secretary, Essex County (N. J.) Tuberculosis League

The National Grange, Lloyd C. Halvorson, Economist

National Health Council, John W. Ferree, M.D., Associate Director

National Organization for Public Health Nursing, Dorothy Rusby, R.N., Assistant Director

National Social Welfare Assembly, David H. Holbrook, Assistant Director

National Tuberculosis Association, James G. Stone, Director, Program Development

Young Mens Christian Association, National Council, H. T. Friermood, Secretary, Health and Physical Education

Mr. Mather was elected Chairman pro tem. of the National Advisory Committee and Martha Luginbuhl, Research Assistant of the Subcommittee on Local Health Units, Secretary pro tem. They will hold office until the organization meeting of the National Advisory Committee.

1. *A.J.P.H.*, Nov. 1947, p. 1502; Jan., p. 109; Mar., p. 456; and Apr., p. 603, 1948.
2. *A.J.P.H.*, June, 1948, p. 903.
3. *A.J.P.H.*, June, 1948, p. 858
4. *A.J.P.H.*, July, 1948, p. 1047.

NURSES CONSIDER ONE NATIONAL ORGANIZATION

Nurses marked a milestone recently in their search for a form of organization that will best serve both nurses and "consumers" of nursing. The effort had its beginnings in 1939, and has gone through several phases, including a major study in 1946.* In November, 1947, 6 national nursing organizations† formed the present Committee on the Structure of National Nursing Organizations to recommend new structure.

This committee, comprising 60 leading nurses from all over the country chosen by the 6 organizations, in the spring produced a "Tentative Plan for One National Nursing Organization" ‡ which was widely circulated among nurses with a request for study and further development.

The plan recognized that nursing

* See "Report on the Structure of Organized Nursing," by Raymond Rich Associates, *American Journal of Nursing*, October, 1946.

† American Association of Industrial Nurses, American Nurses' Association, Association of Collegiate Schools of Nursing, National Association of Colored Graduate Nurses, National League of Nursing Education, and National Organization for Public Health Nursing.

‡ Printed in May, 1948, *American Journal of Nursing* and available in reprint form from Committee on Structure, Room 201, 1790 Broadway, New York 19, N. Y.

faces a dual task: (1) providing better nursing service to the people of the United States, and (2) promoting and protecting the interests of the members of the nursing profession.

While there is no clear line of demarcation between the two tasks, obviously non-nurses, the "consumers" of nursing service, have a vital interest in and responsibility for seeing that adequate nursing services are available. Many purely professional questions, on the other hand, would need to be settled by nurses alone. This dual nature of organized nursing activity is one reason why separate organizations have grown up. Thus the American Nurses' Association is made up of nurses only, while the National Organization for Public Health Nursing, with its focus on community service, and the National League of Nursing Education, which concentrates on education, admit to membership both nurses and non-nurses.

The "Tentative Plan" attempted to reconcile the two approaches by setting up divisions within the one organization to deal with service and education questions. The plan proposes that individual non-nurses, schools of nursing, and nursing services be offered full participation in division activities.

First major commentary on the plan came during the Biennial Convention of the ANA, NLNE, and NOPHN in Chicago in early June.

The ANA House of Delegates, voting on questions placed before it by its board of directors, approved:

1. One national nursing organization
2. Local, state, and national units for the new organization
3. Inclusion of non-nurse members in a single organization

A fourth question as to whether or not non-nurse members should have the right to vote and hold office was referred back to the Committee on Structure for further study.

The NOPHN decided to refer the question of approval of one organization to a vote of its entire membership. Members at the convention approved principles stating that:

"1. A satisfactory organization for the advancement of nursing should include nurse and non-nurse participation with equal rights as members, except in specified areas which should be under the control of professional nurses.

"2. Provision should be made for the membership of agencies engaged in nursing service and nursing education.

"3. Public health nursing, as one of the specialties, should have sufficient autonomy to define standards for service and qualifications for practitioners for its own field, as well as the responsibility for interpreting and effectuating its program."

The NLNE voted that, "Citizens, including members of related professional organizations, should have voice and vote in planning for nursing service and nursing education."

CANADA'S NEW DEAL IN HEALTH

At the recent meeting of the Canadian Public Health Association in Vancouver, B. C., the Honorable Paul Martin, Canadian Minister of National Health and Welfare, declared that "a new era has opened for public health in Canada." He referred to the statement of the Canadian Prime Minister to the Parliament on May 14 as "a memorable occasion in the history of public health in Canada. . . . Remote objectives have now become proximate and possible."

On that day the Prime Minister announced a three-point program to marshal financial resources of the nation in support of the health services of the Canadian Provinces.

The three items for which federal grants are now provided are: (a) grants for health surveys totalling $625,000, (b) grants for health services of $17,000,000 in the first year and rising

eventually to $22,000,000, and (c) grants for hospital construction of $13,000,000 a year for 5 years, with probably $6,500,000 annually for the 5 years thereafter.

Beginning in 1949 the Canadian federal government will make available more than $30,000,000 for health services, more than four times what it is currently spending, and about half of what the provinces are now spending and almost twice municipal health expenditures.

The survey grants are made to the provinces so that they may study their existing needs and plan the machinery for extending hospital care and organizing hospital and medical care insurance.

The health grants are in eight areas; for general public health services 35 cents per capita, rising the fourth year to 50 cents per capita, and totalling $6,500,000; tuberculosis control, $3,000,000 to $4,000,000; mental health care, $4,000,000 to $7,000,000; venereal disease control, crippled children's services, and professional training, each $500,000; public health research, $100,000 to $500,000; cancer control, $3,500,000. The grants for hospital construction are expected to provide more than 40,000 hospital beds.

The Minister of Health indicated clearly the direction the Dominion Government is taking when he said, "When the present program is well under way, it will then be possible to proceed with the implementation of a national plan for hospital and medical care insurance. . . . It prepares the way for Health Insurance by putting into effect those steps that are the essential prerequisites to any adequate national plan."

The new program takes full account of primary provincial responsibility for health under the Canadian Constitution. Mutually acceptable conditions governing grants will be worked out coöperatively between federal and provincial governments; administration will be entirely under provincial jurisdiction. Said the Minister of health, "The provinces have built modern and efficient health services for their peoples—the National Health grants will permit them to extend their programs and to do the sort of job all who work in the public health field have long wanted to get ahead with."

The Prime Minister's statement of May 14 carried forward further the national health program included in the Dominion Proposals to the Provinces in August, 1945, after study of the Canadian health scene. At that time a National Health Insurance Scheme was already a definite goal. Since 1945 a special Division of Health Insurance studies has been working on foundation plans for the formulation of health insurance legislation.

FIRST INTER-AMERICAN SANITARY ENGINEERING CONGRESS

The first Congress of the Inter-American Association of Sanitary Engineering was held early in April in Santiago, Chile. More than 250 members of the Association from nineteen of the American Republics were present, with particularly large delegations from Argentina, Brazil, Peru, and Venezuela. The Congress was opened by the President of Chile, Mr. Gabriel Gonzalez Videla. The officers elected for the ensuing year were: President, Clarence I. Sterling, Jr., Director of Health and Sanitation Division of the Institute of Inter-American Affairs; Vice-President, Alberto Ortiz Irigoyen, Chief, in Charge of Construction, Secretaria de Recursos Hidraulicos, Mexico; Secretary, Donald L. Snow, Sanitary Engineer, Pan American Sanitary Bureau.

The next Congress of the Association will be held in Mexico City in 1949.

FIRST RESEARCH CLINIC TO STUDY MULTIPLE SCLEROSIS

In March the first of a projected series of research clinics in multiple sclerosis was opened in Boston and operated jointly by the Beth Israel and the Boston State Hospitals. This was made possible through a grant from the National Multiple Sclerosis Society which hopes to open another such clinic at the Albany Hospital, Albany, N. Y., in the near future. Others will be opened in leading cities as funds permit.

The Boston clinic and others to be opened will be devoted to research into the causes of multiple sclerosis and the means of control. Red Cross coöperation in Boston is providing ambulance service to bring home-bound patients to the clinic.

Another recent activity of the National Multiple Sclerosis Society was the distribution to about 76,000 physicians in the United States of a manual of information on the diagnosis and treatment of multiple sclerosis prepared by the Society's Medical Advisory Board. With this was a letter asking the number of multiple sclerosis patients being treated by the physician. An extensive survey of the incidence of the disease by the Society's Statistical Committee, is now being planned with the coöperation of the U. S. Public Health Service, under the chairmanship of Lawrence C. Kolb, M.D., of the Service.

HEALTH ADVISORY COMMITTEE TO UAW-CIO

The health and welfare activities of the United Automobile Workers-CIO have been coördinated in a Social Security Department which is under the direction of Harry Becker, formerly of the U. S. Children's Bureau.

In order to have medical guidance in developing the program that is contemplated in the Union's negotiations for a health and welfare fund, a health and medical care advisory committee has been appointed by the Social Security Department. The members of this committee are: George Baehr, M.D., President of the New York Academy of Medicine; Dean Clark, M.D., Medical Director of the Health Insurance Plan of Greater New York; Basil C. MacLean, M.D., Director of the Strong Memorial Hospital, University of Rochester, Rochester, New York; John Peters, M.D., Professor of Medicine, Yale University College of Medicine; Ernest Stebbins, M.D., Director of the School of Hygiene and Public Health, Johns Hopkins University; F. D. Mott, M.D., Chairman of Health Services Planning Commission, Department of Public Health, Saskatchewan, Canada; Dr. Frank Weiser, Director of Education and Research at Grace Hospital, Detroit, Mich.; Katherine Faville, M.Sc., Dean, College of Nursing, Wayne University; and Ethel Cohen, Director of Medical Social Services, Beth Israel Hospital, Boston.

DALLAS MUSEUM INITIATES ANNUAL AWARD

Robert L. Sutherland, M.D., Director of Mental Hygiene of the Hogg Foundation of the University of Texas, received the first annual award of the Dallas Health Museum on April 28 in connection with the first public meeting of the Texas State Medical Association in Houston. The award, in the form of a plaque, was made for Dr. Sutherland's contribution to mental health in Texas, particularly in stimulating acceptance of local responsibility in mental health education. The presentation was made by Haven Emerson, M.D.

ANNIVERSARY OF THE DISCOVERY OF RADIUM

At an American Cancer Society dinner in Philadelphia March 31, commemorating the 50th anniversary of the discovery of radium by Pierre and Marie Curie, their daughter Mlle. Eve

Curie, French author and journalist, received a $10,000 grant for the work of Dr. Antoine Lacassagne of the Radium Institute in Paris. Mlle. Curie said that the money would be used to buy an infra-red spectograph for the Institute.

RURAL MEDICAL STUDENT LOAN FUND

A revolving loan fund to be known as the "Fund for the Encouragement of Medical Practice in Rural Areas" has been created by the Michigan Foundation for Medical and Health Education. A hundred man State Campaign Committee was recently formed with a goal of "$50,000 in Five Months," for the rural practice project. Announcement was made at a Foundation breakfast March 11 at Detroit.

RESEARCH FELLOWSHIPS—THE AMERICAN COLLEGE OF PHYSICIANS

The American College of Physicians announces that a limited number of Fellowships in Medicine, with a stipend from $2,200 to $3,200, will be available from Juy 1, 1949, to June 30, 1950. These are designed to provide opportunity for research training either in the basic medical sciences or in the application of these sciences to clinical investigation. They are for the benefit of physicans in the early stages of preparation for a teaching and investigative career in internal medicine. Assurance must be provided that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with the facilities necessary for the proper pursuit of his work.

Application forms, available from The American College of Physicians, 4200 Pine Street, Philadelphia 4, Pa., must be submitted in duplicate not later than November 1, 1948.

WHO MAKES A MOVIE

"The Eternal Fight" is the title of WHO's first documentary film which is being produced by Madeleine Carroll Films, Inc., for the UN Film Board. It will show the work of WHO, particularly in epidemic control. The film will be shot at Lake Success, Geneva, Paris, and Egypt, and dramatizes the growth of international coöperation in epidemic control. The danger of epidemics has been increased due to ever-increasing speed of transportation, while the means of controlling them have been developed by medical and public health men all over the world.

To be completed late in the summer of 1948, the film, about 20 minutes in length, will be available in 35 mm. and 16 mm. It will be distributed by the United Nations through theatrical and non-theatrical distributors in member countries.

MENTAL HYGIENE FELLOWSHIPS

The U. S. Public Health Service has announced a limited number of mental hygiene research fellowships. These are open to psychiatrists, psychologists, social workers, anthropologists, sociologists, and others with proper qualifications. A pre-doctorate research fellowship carrying a stipend of $1,200 a year is available to those with a bachelor's degree, of $1,600 for those with a master's degree or its equivalent in graduate work. For those with dependents the stipends are $1,600 and $2,000 respectively. Tuition will also be paid. Medical students who have completed one or two years of medical work may also apply.

A post-doctorate research fellowship, to be awarded to qualified individuals holding a doctor's degree in medical or related fields, carries a stipend of $3,000 ($3,600 for doctors with dependents), but not including tuition. Also offered is a special research fellowship to those who qualify for a post-doctorate fellowship and in addition have demonstrated outstanding ability or possess specialized training. This fellowship does not carry a set stipend,

the amount being determined in the individual case. Additional information may be obtained from Division of Research Grants and Fellowships, National Institute of Health, Bethesda 14, Md.

COURSES FOR SUPERVISORS OF STUDENT HEALTH

New York University in its School of Education's Department of Physical Education and Health has completed the first year of a new curriculum designated as "Courses for Supervisors of Student Health." The course, leading to a bachelor's or master's degree, is designed to prepare graduate registered nurses and other qualified students for positions as supervisors of student health in colleges and schools of nursing. Its first class included seven students.

The courses and promotional work were planned by a committee of ten, representing the university faculty, official and voluntary health agencies, schools of public health, and colleges.

The program has been made possible through a grant of funds from the Helene Fuld Health Foundation. It is in charge of Ella F. Harris, M.D., assistant professor in the Department of Physical Education and Health. She should be addressed at New York University, Washington Square, New York, for information as to the program for 1947-1948.

CUTTER DEXTROSE SOLUTIONS BACK IN DISTRIBUTION

The June *Journal* (p. 819) printed the Cutter Laboratories' telegram recalling all its dextrose solutions. On June 21 the following statement was released, indicating that these solutions are again being distributed safely:

"We are now ready to resume shipment of Cutter solutions in Saftiflasks from our Berkeley and branch warehouses.

"We wish we could tell you that the cause of the contamination is now definitely known. We cannot truthfully do so. In the six weeks since we recalled our solutions, hundreds of thousands of flasks have been critically examined. Every piece of equipment and every instrument was meticulously checked. There was no evidence of equipment or instrument failure, and we could not definitely confirm closure failure or any other cause.

"We can assure you, however, that not a single bottle which was clear on visual inspection has been found to be contaminated, and that we will continue to do everything in our power to assure the safety that has been the cornerstone of our existence and growth for over fifty years."

MIDDLE STATES HEALTH EDUCATORS MEET

On May 14 and 15, the second annual conference of the Middle States Region Health Educators was held at Des Moines, Iowa, with 94 persons representing Indiana, Illinois, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin in attendance. There were fruitful discussions on training, school health, health councils, and the responsibilities of health educators. Discussion indicated that health education is penetrating two new fields—industry and hospitals.

A third conference is planned for the spring of 1949.

ENVIRONMENTAL SANITATION REFRESHER COURSE

A one week in-service training course, designed specifically as a practical refresher course for qualified public health personnel, interested in environmental sanitation will be held September 13-17, 1948, at the University of Massachusetts. This training program is intended for but not limited to residents of Massachusetts.

The program is sponsored by the uni-

versity Department of Bacteriology and Public Health, in coöperation with other university departments and federal and state agencies. There will be one day sessions on each of the following subjects: Milk Sanitation, Industrial Sanitation, Restaurant Sanitation, Water and Sewage Sanitation, Rodent and Insect Control.

For application forms, apply to the Director of Short Courses; for details, to the Department of Bacteriology and Public Health, University of Massachusetts, Amherst.

WEST VIRGINIA PUBLIC HEALTH ASSOCIATION

The West Virginia Public Health Association held its 1948 Annual Meeting in Huntington on May 27 and 28. Over three hundred persons attended this meeting, making it the largest gathering of West Virginia public health workers.

An Industrial Hygiene Section and a Clerks' Section were established and meetings were arranged for these and other groups within the Association.

The American Public Health Association was represented at the meeting by Roscoe P. Kandle, M.D., Field Director. New Officers for 1948-1949 are as follows:

President—L. A. Dickerson, M.D., Charleston.

1st Vice-President—Charlotte McLoughlin, Charleston.

2nd Vice-President—H. B. Wise, M.D., Weston.

Exec. Secy.—Annette King, Charleston.

DR. CHESLEY HONORED BY MINNESOTA STATE MEDICAL ASSOCIATION

On June 8 at the meeting of the Minnesota Medical Association, the House of Delegates unanimously voted that the Distinguished Service Medal of the Association be awarded to Dr. Albert Justus Chesley "in recognition of his nearly half a century of outstanding service in the field of public health and social hygiene, not only in Minnesota but elsewhere in the United States and abroad; and for his rare insight and fine understanding of the private practice of medicine to which, as one of its most ardent advocates, he has given unfailing coöoperation at all times."

UTAH PUBLIC HEALTH ASSOCIATION

The Utah Public Health Association held its Annual Meeting in Salt Lake City May 25 to 27 and elected the following new officers at that time:

President—L. P. Gebhardt, M.D., Salt Lake City.

President-Elect—J. P. Kesler, M.D., Ogden.

Vice-President—W. F. Bulkley, D.D., Salt Lake City.

Secretary—Dean A. Anderson, Ph.D., Provo.

Treasurer—Lena Besendorfer, Salt Lake City.

NEW ENGLAND HEALTH INSTITUTE MEETS IN AMHERST

A session of the New England Health Institute, in combination with the annual meeting of the Massachusetts Public Health Conference, was held at the University of Massachusetts, Amherst, under the sponsorship of the Massachusetts Public Health Association, the University of Massachusetts, and the Massachusetts Department of Public Health, June 16–18. About 600 persons were registered, including representatives of New England states, both official and voluntary, for the three day session.

The opening address was presented by Ira V. Hiscock, Sc.D., Professor of Public Health at the Yale School of Medicine, New Haven, on "The Scope of a Health Program." Other features included panels on "Improvement of Local Health Services," "Chronic Illness —A Challenge to Public Health," "Citizens' Committees: How to Develop and Keep Them Active," laboratory and environmental problems, a panel on "Community Nutrition Services in Action," and another on "Health Needs of the Child."

Featured speakers included Warren F. Draper, M.D., American Red Cross, Washington; Martha M. Eliot, M.D., President, American Public Health Association; Vlado A. Getting, M.D., Commissioner, Massachusetts Department of Public Health; Franz Goldman, M.D., Harvard School of Public Health; Hugh R. Leavell, M.D., Harvard School of Public Health; Leonard A. Scheele, M.D., Surgeon General, U. S. Public Health Service, Washington; V. A. Van Volkenburgh, M.D., New York State Department of Health, Albany; Charles F. Wilinsky, M.D., Beth Israel Hospital, Boston, President, Massachusetts Public Health Association and President-Elect, American Public Health Association.

HEALTH NEWS FROM HAWAII

The Public Health Committee of the Chamber of Commerce of Honolulu has recently announced an appropriation of $18,000 to be used in the establishment of a diagnostic and treatment clinic for cancer.

According to Ray G. Nebelung, Dr. P.H., Executive Director, the committee has also established two scholarships in the amount of $2,500 to be made annually to local individuals already in public health or planning to enter the field. The first recipients include one student of health education at the Yale School of Medicine, New Haven, and another who will spend 15 months in Boston and New York in sight conservation.

In September, the Public Health Committee is sponsoring a sanitation week at which time Professor Walter Mangold from the University of California School of Public Health will conduct an intensive in-service training program for the Board of Health personnel. In connection with this activity business and civic leaders are planning in coöperation with health department officials to undertake an activity program to emphasize the importance of sanitary environment and to offer the citizens an opportunity to learn what services are provided and what part they may play in improving conditions from a sanitary standpoint.

The Oahu Health Council has been active in preparing a program of proposed health legislation to be sponsored in the next session of the legislature.

During the last three years studies have been under way on eight areas of post-war interest in public health. The report is shortly to be released.

U. S. CONGRESS ENACTS LEGISLATION ON HEART DISEASE

In early June the U. S. Congress completed consideration and approved a national program to curb cardiovascular diseases by stimulating research, professional training, and public control measures. The initial appropriation is about three million dollars and, according to the *Washington Report on the Medical Sciences*, more than half is earmarked for research grants in aid to universities, hospitals, laboratories, and other institutions, as well as to individuals whose projects may be approved. Briefly, the new law establishes a national heart institute which will be housed in the forty million dollar clinical research center to be erected in Bethesda, Md., create a national advisory heart council composed of federal medical service representatives and twelve prominent citizens divided equally between scientific authorities and laymen, provide for fellowships, and directs the Surgeon General to assist state and local governments in setting up diagnostic and control programs. This legislation has had the consistent support of the American Heart Association, a member of the National Health Council, but the National Heart Committee formed recently with headquarters in New York has issued a statement claiming for

itself credit for being the spearhead of the drive.

During the same week the American Foundation for High Blood Pressure with headquarters in Cleveland announced that it had allocated $75,000 for research in hypertension, arteriosclerosis and associated conditions.

DR. BERGSMA APPOINTED NEW JERSEY COMMISSIONER OF HEALTH

Daniel Bergsma, M.D., M.P.H., took office as State Commissioner of Health in New Jersey on June 1, having been nominated by Governor Driscoll and approved by the State Senate. Dr. Bergsma's appointment is the first as State Commissioner of Health under the revised statutes of New Jersey which reorganized the State Department of Health under the new Constitution.

Joining the New Jersey State Department of Health in 1938 as a medical assistant, Dr. Bergsma served as Chief of the Bureau of Venereal Disease Control from 1940 until 1942 when he entered the Army Medical Corps. A native of New Jersey, Dr. Bergsma was born in 1909, and is a graduate of Oberlin College and Yale University School of Medicine. In 1946 he received the M.P.H. degree from the University of Michigan.

Dr. Bergsma advanced through the Medical Corps from the entering rank of Captain and was promoted to Colonel in 1946. During the war he was assigned to the Headquarters of the Eastern Defense Command and First Army and later at Headquarters in the Caribbean Defense Command in the area covering troops in Central America and the countries of northern and western South America, with assignment as Assistant Theater Surgeon. He is a recipient of the Legion of Merit, Headquarters Caribbean Defense Command. Dr. Bergsma is a Fellow of the A.P.H.A., and is Vice-President of the New Jersey Health and Sanitary Association.

ARMY SYPHILIS RECORDS

The Veterans Administration has in its custody the majority of syphilis records of those Army personnel who were treated for this disease while in active service, and in many instances can procure informative data from the syphilis records of other than Army personnel. It is thought that many physicians treating veterans for syphilis as private patients would find a résumé of the syphilis record useful since the details of treatment, results of spinal fluid examinations, and blood serologies are incorporated in the records.

Résumés of these records are available to physicians who are treating such veterans provided authorization for the release of the data is given by the veteran. Requests for the résumés accompanied by an authorization for the release of the data, dated and signed by the veteran, should be addressed to the Dermatology and Syphilology Section, Veterans Administration, Munitions Building, Washington 25, D. C. It is most important that the veteran's Service Serial Number and other identifying information, such as the date of enlistment, the date of discharge, rank, and organization be included.

Ordinarily, the résumés can be furnished in approximately two weeks from the date of the receipt of the request and signed authorization.

ILLUMINATING ENGINEERING SOCIETY ELECTS L. E. TAYLER PRESIDENT

Lee E. Tayler of the Detroit Edison Co., Detroit, Mich., has been elected President of the Illuminating Engineering Society to take office October 1, 1948.

Other officers elected are: General Secretary, A. H. Manwaring, Philadelphia Electrical & Mfg. Co., Philadelphia; Treasurer, E. M. Strong, Cornell

University, Ithaca, N. Y.; Vice-President, Walter Sturrock, General Electric Co., Cleveland, Ohio; Directors, Myrtle Fahsbender, Westinghouse Electric Corp., Bloomfield, N. J.; Hoyt Steele, Benjamin Electric Mfg. Co., Des Plaines, Ill.

DRS. TAUSSIG AND BLALOCK RECEIVE PASSANO AWARD

The 1948 Passano Foundation award was presented to the Taussig-Blalock team which developed the operation popularly known as the "blue baby operation." Presentation of the $5,000 cash award was made June 23 at the Palmer House, Chicago, during the Annual Session of the American Medical Association. Since this operation was first undertaken in November, 1944, more than 600 patients drawn from all parts of the world have been operated on at Johns Hopkins Hospital alone. Dr. Helen B. Taussig is Associate Professor of Pediatrics and Dr. Alfred Blalock is Professor of Surgery at Johns Hopkins University School of Medicine.

The Williams & Wilkins Company of Baltimore established the Passano Foundation in 1944 to aid in the advancement of medical research, especially research which promises clinical application.

CANADIAN PUBLIC HEALTH ASSOCIATION

The following are the new officers of the Canadian Public Health Association as elected at the 36th Annual Meeting in Vancouver, May 17–20, 1948:

Honorary President:
The Hon. F. R. Davis, M.D., Halifax N. S.
President:
Allan R. Morton, M.D., Halifax, N. S.
President-Elect:
John T. Phair, M.D., Toronto, Ont.
Vice-Presidents:
Elizabeth Russell, R.N., Winnipeg, Man.
George D. W. Cameron, M.D., Ottawa, Ont.
S. Stewart Murray, M.D., Vancouver, B. C.
Honorary Treasurer:
William Mosley, M.D., Toronto, Ont.
Editor, Canadian Journal of Public Health:
Robert D. Defries, M.D., Toronto, Ont.
Executive Director:
J. H. Baillie, M.D., Toronto, Ont.

WHO TRAINS TUBERCULOSIS FELLOWS IN DENVER

Four fellows, appointed by the Interim Commission of the World Health Organization from various countries, on July 1 began 6 months' free instruction in methods of tuberculosis prevention, control, and treatment at the National Jewish Hospital, Denver, Colo. Beginning January 1, 1949, the World Health Organization will send annually twelve who will receive instruction at this hospital, the University of Colorado School of Medicine, Fitzsimons General Hospital, and other Denver institutions. Traveling expenses will be financed by the organization. Living expenses will be contributed by the International Foundation for Medical Research and Education.

ROUTINE CHEST X-RAY OF HOSPITAL ADMISSIONS

Beginning early in May, Morrisania Hospital, one of New York's municipal hospitals, began routine chest x-ray examinations of all incoming patients. The x-ray machine and technicians for the project are being furnished by the Bronx Committee of the New York Tuberculosis and Health Association. It is expected that the demonstration will be so effective that it will be installed in other municipal hospitals of the city.

NEW HOME FOR CHICAGO TUBERCULOSIS INSTITUTE

The Tuberculosis Institute of Chicago and Cook County has acquired its own building in an effort to keep pace with a rapidly expanding program. Since its founding in 1906, the Institute had rented space at 5 different locations, moving into larger quarters as public support of the program increased. The building, ideally suited to the Institute's tuberculosis eradication program, is sit-

uated in the area with the greatest tuberculosis incidence in the city. Last year 532 cases were reported in the area.

The officers, staff, and directors of the Institute entertained approximately 500 persons at "Open House" at the new address, 1412 W. Washington Blvd., on April 16. A mobile unit was stationed at the front door and free chest x-rays were made of all visitors. Other features included exhibits on tuberculosis, pictorial displays of staff activities, and continuous showing of films and slides.

STONE-MARSHALL TEST PAPER CHANGES HANDS

Charles G. Marshall, President of the Chemiatric Corporation, Sparta, N. J., announces the acquisition from the Universal Chlorinator Company of all patent rights to the Stone-Marshall test paper, utilized for testing quaternary ammonium compounds used in the food, dairy, and allied industries. Samples of the test paper are available.

MR. BURRITT RETIRES FROM NATIONAL HEALTH COUNCIL

Bailey B. Burritt resigned as Executive Director of the National Health Council on June 30, 1948. Early in 1947, Mr. Burritt was induced to come out of retirement to devote himself to the National Health Council's new nation-wide health program until such time as a permanent director was secured. He had retired in 1944, as Senior Executive Director of the Community Service Society of New York after 30 years during which he was instrumental in bringing health services within the reach of thousands of New York families.

During the year and a half since Mr. Burritt became its Executive Director, the National Health Council has assumed renewed leadership among its national public health agency members and has stimulated interest and action throughout the country in behalf of effective, forceful public health programs.

Commenting on Mr. Burritt's resignation Philip R. Mather, President of the Council said, " Mr. Burritt came to the National Health Council with years of fruitful service in behalf of the public already behind him. His seasoned judgment, wise counsel, and strong leadership have been invaluable in laying the foundation for the long range program of the Council. It was with greatest reluctance and in deference to Mr. Burritt's urgent request that the Board of Directors accepted his resignation at this time."

The work of the Council will continue under the administration of John W. Ferree, M.D., Associate Director since May, 1947, until a successor to Mr. Burritt is appointed. Working in close coöperation with Mr. Burritt, he has been engaged principally in helping local and state health councils to broaden the scope of their usefulness and in stimulating the organization of new councils to increase the effectiveness of the local health programs.

Dr. Ferree entered public health work in 1936 as Chief of the Bureau of Local Health Administration of the Indiana State Board of Health, and from 1940 to 1942 was State Health Commissioner of Indiana. He later served in the U. S. Navy, Division of Preventive Medicine, until 1945, reaching the rank of Commander. Before joining the National Health Council he was Director of the Division of Education of the American Social Hygiene Association, a member agency of the National Health Council.

BUILDING FROZEN FOOD LOCKER PLANTS

Recognizing the growing importance of frozen food locker plants, the Com-

mittee on Sanitary Engineering and Environment, Division of Medical Sciences of the National Research Council (Washington, D. C.) recently published a report entitled, "Control of Frozen Food Locker Plants." Possible health problems that may be found in these plants through design or operation are discussed. Recommendations for the construction and operation of frozen food plants are given as follows:

1. Operators who propose to build locker plants should have plans drawn up under the supervision of a competent engineer and secure the approval of the state health authority for these plans before construction is begun.

2. To prevent heat infiltration and thus encourage the maintenance of low temperatures, special attention should be given to the construction of floors, walls, and ceilings of cold rooms and to the conductance of building materials.

3. Separate compressors of the same make should be provided for the chill, sharp-freeze, and storage rooms. Each compressor should have sufficient capacity to carry the whole cooling load and should be installed so that it can readily be used for any one of the services.

4. Standby electric service should be provided wherever possible.

5. Locker plant operators should consider future developments such as operating slaughter houses, meat and food processing plants, kitchens, and bakeries.

6. Locker plant regulations should safeguard the public health, provide for sanitary operation of plants, but avoid unnecessary details that might obstruct individual initiative and progress.

The subcommittee preparing this report consisted of W. D. Tiedeman, V. M. Ehlers, and L. F. Warrick. The Chairman of the Committee on Sanitary Engineering and Environment is Dr. Abel Wolman.

PERSONALS

Central States

CHARLES H. MILLER, JR., M.D., has recently been appointed Health Officer for the newly established four-County Health Department, which includes Hardin, Johnson, Massac, and Pope counties, Illinois. Dr. Miller has served as District Health Superintendent and also in the State Department of Public Health.

Eastern States

MARTA FRAENKEL, M.D.,* formerly Research Associate with the Department of Preventive Medicine, Long Island College of Medicine, Brooklyn, N. Y., has become Research Director of the New York State Joint Legislative Committee for the Study of Cerebral Palsy in the Albany headquarters of the New York State Health Department.

MARIAN MCBEE, Executive Secretary of the New York Committee on Mental Hygiene, has been elected President of the American Orthopsychiatric Association for 1949-1950.

ANTONIO P. MILONE, M.D.† has been appointed Health Officer of North Adams, Mass., effective September. In addition to his private practice, Dr. Milone has served since 1946 as part-time school medical inspector in the Boston Health Department.

JAMES O. WAILS, M.D.,* retired as Health Commissioner of Worcester, Mass., on June 30. Before assuming his duties in Worcester in 1943, he was Director of the Nashoba Health District with headquarters at Ayer.

Southern States

C. H. BENNING, M.D.,* was named City Health Officer of Tulsa, Okla., effective May 1.

ABRAHAM GELPERIN, M.D., M.P.H.,† was appointed Director of the Bureau of Communicable Diseases (includ-

ing veneral disease control) in the New Haven, Conn., Department of Health as of May 17. Since 1946 he has been a member of the staff of the Johns Hopkins School of Hygiene and Public Health in Baltimore, Md.

EDGAR ERSKINE HUME, M.D., Dr.P.H.,* has been promoted to the permanent rank of Brigadier General in the U. S. Army Medical Corps. General Hume, during World War II, participated in the African, Sicilian, and Italian campaigns. He was Chief of Public Health in Sicily in 1943.

EDWARD F. KNIPLING, M.D., as Director of the Orlando Station of the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture during the war period, was awarded the Medal of Merit on May 20 by the Department of National Defense. The citation, signed by President Harry S. Truman, reads in part, "Dr. Knipling planned and directed investigations for the development of insecticides and repellents for the prevention of insect-borne diseases in the United States Army." Dr. Knipling is at present in charge of the Division of Insects Affecting Man and Animals, of the U. S. Department of Agriculture, Washington, D. C. He was notified early this year that he was also to be awarded Great Britain's highest decoration to civilians, The King's Medal for Service, for his part in the same investigations.

ABRAHAM J. KRELL,† has accepted a position with the Layne-Texas Company, Ltd., Dallas, Tex., in charge of the newly organized Water Treatment Division. He was formerly Sanitary Engineer, Technical Service and Sales Division of the General Filter Company, Dallas.

J. W. MARKLEY, M.D., was appointed July 1 as Director of the recently created Bureau of Hospital and Medical Care, West Virginia State Department of Health.

R. G. MEADER, Ph.D., has been appointed Deputy Chief, Cancer Research Grants Branch of the National Cancer Institute, Bethesda, Md., effective June 1. Dr. Meader will be responsible for securing scientific review of applications for federal cancer grants, for maintaining contact with investigators in fields bearing on cancer research, for analyzing the grant-in-aid program of the National Cancer Institute in relation to programs of other agencies supporting cancer research, and liaison with those agencies.

I. O. POLLOCK, M.D., on May 1, became Director of the five-county Health Department which serves Adair, Cherokee, Delaware, Mayes, and Sequoyah counties in Oklahoma, with headquarters in Tahlequah.

Western States

DANIEL J. HURLEY, M.D.,† of Carson City has been appointed State Health Officer of Nevada. Dr. Hurley has been in private practice, and County Health Officer of Eureka County since 1928.

Other Areas

HELEN M. BAUKIN,* retired as Director of Dental Health Education, Department of Public Instruction, Territory of Hawaii on August 1. She organized the work in 1922 and has been Director since.

EIGIL JUEL HENNINGSEN, M.D., Deputy Chief Medical Officer of the National Health Service of Denmark, with headquarters in Copenhagen, left New York on July 1 after a 3 month's visit under a traveling Fellowship granted by the Rockefeller Foundation. Dr. Henningsen visited health departments and schools of

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* Fellow A.P.H.A.
† Member A.P.H.A.

public health during his stay, and spent some time in the office of the American Public Health Association.

LEO KAPRIO, M.D., M.P.H., who has recently completed his course at the Johns Hopkins School of Hygiene and Public Health, Baltimore, Md., will return to Helsinki, Finland, to become Secretary of the Finnish Public Health Association, succeeding ERKKI LEPPO, M.D.

ERKKI LEPPO, M.D., of Helsinki, Finland, who has been Secretary of the Finnish Public Health Association, which has just completed its 10th year, has been appointed to a medical post in the World Health Organization staff in Geneva, Switzerland, in connection with the maternal and child health program.

MARION YANG, M.D.,* of the staff of the Chinese Ministry of Health, Nanking, has been elected a member of the Legislative Yuan and has left the United States, where she was traveling in a study of maternal and child health services, to attend the first sessions in Nanking.

Deaths

PHILIP E. BLACKERBY, M.D.,* Kentucky State Health Commissioner since 1943, died at his home in Louisville of a cerebral hemorrhage on June 24, at the age of 66. Dr. Blackerby was elected a member of the Association in 1933 and a Fellow in 1945. He was also a Fellow of the American Medical Association and Secretary of the Kentucky State Medical Society.

JAMES H. HEALD,† Laboratory Director, Southern Dairies, Winston-Salem, N. C., Elected Member of Engineering Section in 1919.

JULIUS A. HENE, M.D.,† New York, N.Y., was killed while a prisoner of war. He was elected as an unaffiliated member of the Association in 1940.

LESLIE A. SANDHOLZER, Ph.D.,* Bacteriologist in Charge, Fishery Technological Laboratory, U. S. Fish and Wildlife Service, College Park, Md. He was elected a member in 1940 and a Fellow in 1944 (Laboratory Section).

WILLIAM M. SMITH, M.D., M.P.H.,* Olean, N. Y., recently Acting State Health Officer of North Dakota. Elected a member in 1938 and a Fellow in 1943 (Health Officers Section).

GEORGE A. SOPER, Ph.D.,* 78, sanitation engineer responsible for the discovery of the famous "Typhoid Mary," died in Southampton Hospital, New York, on June 18. Dr. Soper became a member of the Association in 1895 and a Charter Fellow of the Engineering Section in 1922.

CONFERENCES AND DATES

American Association for the Advancement of Science. Centennial Meeting. Washington, D. C. September 13–17.

American Chemical Society. Three Sessions in Washington, D. C., St. Louis, Mo., and Portland, Ore. August 30–September 17.

American Dental Association. Chicago, Ill. Week of September 12.

American Dietetic Association. Boston, Mass. October 18–22.

American Hospital Association. 50th Anniversary Convention. Atlantic City, N. J. September 20–24.

American Occupational Therapy Association. Hotel Pennsylvania, New York, N. Y. September 7–11.

American Public Health Association—76th Annual Meeting. Boston, Mass. November 8–12.

American Public Welfare Association. Southwestern Region. Topeka, Kan. September 23–24.

American Public Works Association. Boston, Mass. October 17–20.

American Society of Planning Officials. New York, N. Y. October 11–13.

American Water Works Association:

Kentucky-Tennessee Section. Patton Hotel, Chattanooga, Tenn. August 23–25.

Michigan Section, Flint, Mich. September 22–24.

Minnesota Section, Winnipeg, Man., Can September 1–2.

New York Section, New York, N. Y. September 14–17.

Rocky Mountain, Cheyenne, Wyo. September 16–17.

West Virginia Section, Clarksburg, W. Va. September 29–30.

Civil Service Assembly of the United States and Canada. Ottawa, Canada. October 4–7.

Florida Public Health Association. Panama City, Fla. October 7–9.

Indiana State Medical Association. Indianapolis, Ind. September 26–29.

International Congress on Mental Health. London, England. August 11–21.

National Association of Housing Officials. Seattle, Wash. October 13–16.

National Pest Control Association. Royal York Hotel, Toronto, Canada. October 18–20.

National Recreation Congress. Hotel Fontenelle. Omaha, Nebr. September 26–October 1.

National Technical Conference of the Illuminating Engineering Society. Hotel Statler, Boston, Mass. September 20–24.

New York State Association of Milk Sanitarians. Buffalo, N. Y. September 22–24.

Ninth International Congress of Industrial Health. London, England. September 13–17.

North Dakota Public Health Association. Minot, N. D. October 28–29.

Public Works Congress and Equipment Show of American Public Works Association. Boston, Mass. October 17–20.

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Publications of the A.P.H.A.

An Appraisal Method for Measuring the Quality of Housing: A Yardstick for Health Officers, Housing Officials and Planners. Part I. Nature and Uses of the Method. 1945. 71 pp. $1.00.

A.P.H.A.-Year Book 1947–1948. 112 pp. $1.00.

Part II. Appraisal of Dwelling Conditions. Director's Manual; Field Procedures; Office Procedure (1946). $5.00.

Basic Principles of Healthful Housing. 2nd ed. rev. 1946. Report of the Committee on the Hygiene of Housing. 34 pp. $.40.

Control of Communicable Diseases, The. 6th ed., 1945. Size 4¼" x 7¾". 149 pp. $.35.

Diagnostic Procedures and Reagents. Technics for the Laboratory Diagnosis and Control of the Communicable Diseases. 2nd ed., 1945. $4.00.

Diagnostic Procedures for Virus and Rickettsial Diseases. 1948. 347 pp. $4.00.

Health Practice Indices. A collection of charts showing the range of accomplishment in various fields of community health service. 1945. 87 pp. Free.

Membership Directory. 1946. (Free to A.P.H.A. members). $5.00.

Methods for Determining Lead in Air and in Biological Materials. 1944. 41 pp. $.75.

Occupation Lead Exposure and Lead Poisoning. 1943. 67 pp. $.75.

Panum on Measles. By P. L. Panum (translation from the Danish). Delta Omega ed., 1940. 111 pp. $2.50.

Photographic Sediment Chart, 1947 ed., $1.50.

Planning the Neighborhood. Committee on the Hygiene of Housing, 1948. 89 pp. $2.50.

Public Health: A Career with a Future. Rev. ed. 1948. $.15.

Public Health in Midstream. Papers presented at the Special Sessions at Atlantic City. Supplement to A.J.P.H., Jan. 1948. $1.00.

Proceedings of the National Conference on Local Health Units. Supplement to A.J.P.H., Jan. 1947. 160 pp. Covered, $1.00.

Proceedings of the Princeton Conference on Local Health Units, September 1947. $.50.

Shellfish and Shellfish Waters, Recommended Methods of Procedure for Bacteriological Examination of. 1947. 12 pp. $.25.

Spanish Summary of 8th edition (1941) of Standard Methods for the Examination of Dairy Products, 1945. 52 pp. Free to Latin American countries. $.10 in the United States.

Standard Methods for the Examination of Water and Sewage. 9th ed., 1946. 286 pp. $4.00.
Physical and chemical examination of water and sewage, microscopical examination of water and bacteriological examination of water.

Survey Form for Milk Laboratories. Indicating Conformity with Standard Methods for the Examination of Dairy Products (8th ed.). May, 1944. Single copies 10c; 50 copies $1.00; 100 copies $1.50; 1,000 copies $10.00.

Swimming Pools and Other Public Bathing Places, Recommended Practice for Design, Equipment and Operation of. 1942. 56 pp. $.50.

Vital Statistics Directory. Compiled by the Vital Statistics Section. 3d ed., 1945. $.75.

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